Try Exam

편입 실전 독해 40

지문 40 · 사고력 문제 120 · 정답과 해설·해석 이름 _____ 날짜 _____ 점수 _____

독해 1 · Moral Luck

We usually assume that people should be judged only for what lies within their control. Yet consider two drivers who both glance at their phones for the same two seconds on the same road. One arrives home without incident, while the other strikes a child who has suddenly run into the street. Their conduct was identical, and the difference in outcome was produced entirely by circumstances neither could foresee. Nevertheless, almost no one thinks the two deserve equal blame, and the law punishes the second driver far more severely. Philosophers call this tension moral luck: the way factors beyond our control seem to shape the praise and blame we receive. One response is to insist that our reactions are simply mistaken and that both drivers are equally culpable. The difficulty is that the same reasoning, pushed far enough, threatens to dissolve responsibility altogether. Our characters, after all, were formed by genes and upbringings we did not choose, so even our intentions are partly a matter of luck. If only what is fully controlled can be judged, it is unclear that anything remains to be judged at all.

1 What is the main purpose of the last three sentences of the passage?

① To explain why the second driver, whose outcome was worse, deserves more blame than the first
② To show that the law should punish both drivers equally because their conduct was identical
③ To prove that intentions matter more than outcomes when we assign praise and blame
④ To argue that one tempting solution to moral luck leads to an unwelcome conclusion

2 Which of the following situations best illustrates moral luck as described in the passage?

① Two doctors make the same careless error, but only one patient has a fatal allergy, so only that doctor is sued.
② A thief who plans a robbery carefully for months is caught because he leaves fingerprints at the scene.
③ A student who studies hard every night for weeks receives a much higher exam score than a classmate who did not.
④ A worker who is promoted for good performance later works even harder to justify the confidence placed in her.

3 **The author would most likely agree with which of the following?**

① People raised with good upbringings deserve less praise than others, since their good characters are largely a matter of luck.

② Our intuitions about blame can be safely ignored, because they treat two drivers with identical conduct inconsistently.

③ The problem of moral luck cannot be solved simply by limiting judgment to what is under our control.

④ Only outcomes, not intentions, should determine responsibility, as the law's harsher treatment of the second driver shows.

독해 2 · Goodhart's Law

When a government wanted to reduce the number of cobras in a colonial city, it began paying a reward for every dead snake. At first the policy appeared to work, as residents brought in large numbers of carcasses. Soon, however, enterprising citizens began breeding cobras in order to collect the reward. When officials discovered the scheme and cancelled the program, the breeders released their worthless snakes, leaving the city with more cobras than before. Whether or not the story is literally true, it captures a principle that the economist Charles Goodhart observed in monetary policy. A measure that once tracked something we care about tends to lose that connection once people are rewarded for improving the measure itself. Hospitals judged by waiting times may keep patients in ambulances outside the door, and schools judged by test scores may teach the test rather than the subject. In each case the number improves while the reality it was meant to reflect stays the same or grows worse. The lesson is not that measurement is useless, but that any single target invites people to find the cheapest way of hitting it.

4 **Which of the following would the author most likely recommend to an organization that wants to evaluate its employees?**

① Keeping evaluation criteria secret so that employees cannot find cheap ways to game them
② Using several indicators and checking whether improvements in them correspond to real progress
③ Abandoning all forms of measurement, since any number can be manipulated by those it judges
④ Choosing one clear number and rewarding employees strictly according to how much they improve it

5 **What does the cobra story most clearly demonstrate?**

① Dangerous animals like cobras cannot be controlled by economic incentives of any kind.
② Citizens will reliably cooperate with government programs as long as they are paid.
③ Colonial governments were generally too incompetent to design effective public policies.
④ A reward attached to an indicator can create behavior that defeats the original goal.

6 **The phrase "teach the test rather than the subject" implies that schools might _____.**

① refuse to give tests to students whose scores might be low
② hire more teachers to improve instruction in the subject
③ make tests more difficult than necessary to look rigorous
④ raise scores without necessarily improving students' understanding

독해 3 · The Survivors We Study

During the Second World War, analysts examined bombers that returned from missions and mapped where they had been hit. The obvious proposal was to add armor to the areas most covered with bullet holes. The statistician Abraham Wald argued the opposite, pointing out that the sample contained only planes that had survived. Holes in the wings showed where a plane could be damaged and still return; the untouched engines showed where a hit was fatal. The missing planes, in other words, carried the most important information precisely because they were missing. This error, now called survivorship bias, appears whenever we draw conclusions from the cases that happen to remain visible. Business books that study successful companies to identify the habits of winners rarely examine the failed firms that shared those very habits. Likewise, the claim that old buildings were better made ignores the fact that the poorly made ones fell down long ago. The remedy is to ask, before trusting any pattern, what the evidence would look like if the failures had been counted too.

7 **Why did Wald recommend protecting the engines rather than the wings?**

① Enemy guns were aimed mainly at the wings, so the engines were rarely in range.

② Planes hit in the engines tended not to return, so their damage was absent from the sample.

③ Engines were cheaper and easier to armor than the wide surface of the wings.

④ The wings had already been protected with heavy armor before the analysts began mapping the bullet holes.

8 **Which of the following claims commits the same error that the passage describes?**

① "The survey included both satisfied and dissatisfied customers, so its results reflect the full range of opinion."

② "Sales rose after the price was lowered, but other factors such as the season may also have changed."

③ "This medicine was tested on two randomly assigned groups, and the treated group recovered noticeably faster than the control group."

④ "Most lottery winners I have read about bought tickets every week, so buying weekly is the key to winning."

9 **The author mentions old buildings primarily in order to _____.**

① praise the superior craftsmanship of earlier generations of builders

② explain why poorly constructed buildings eventually fall down

③ argue that modern buildings are more poorly made than old ones

④ show that survivorship bias extends beyond business and warfare

독해 4 · Words for Colors

Russian speakers must choose between two basic words for blue, one for lighter shades and one for darker ones. English speakers, by contrast, can call both simply "blue" without any sense of inaccuracy. Researchers have found that Russian speakers are slightly faster at telling apart two blues that fall on different sides of their linguistic boundary. Interestingly, this advantage disappears when participants are asked to repeat a string of numbers silently during the task. Occupying the verbal system in this way seems to block the help that the color words were providing. Such findings support a modest version of the idea that language shapes thought. They do not show that English speakers cannot see the difference between light and dark blue, which they plainly can. What they suggest is that words act as quick tools that the mind recruits when they are available, nudging attention without imprisoning perception.

10 What is the significance of the finding that the advantage disappears during the number task?

① It suggests that the advantage depends on the active use of language during perception.
② It indicates that the original experiment was poorly designed and its results cannot be trusted.
③ It proves that numbers and colors are processed in the same part of the brain.
④ It shows that Russian speakers have better eyesight than English speakers do.

11 Which of the following statements would the author most likely reject?

① Language can influence how quickly we make certain distinctions, such as between shades of blue.
② Speakers of a language without a separate word for light blue are unable to perceive it as different.
③ The effect of language on thought is real but limited, and it can be blocked by occupying the verbal system.
④ Words can direct attention to differences when they are available to the mind.

12 The word "imprisoning" in the last sentence suggests that the author _____.

① believes language completely determines what we can perceive
② distinguishes between influencing perception and confining it
③ thinks color words are harmful to perception
④ considers perception more important than attention

독해 5 · Expecting to Heal

The placebo effect is often described as patients being fooled into feeling better by sugar pills. That description captures something real, but it overlooks how much of the effect lies in the ritual surrounding treatment. In several studies, injections produced stronger placebo responses than pills, and expensive-looking pills outperformed cheap ones. Even a doctor's warmth and the length of the consultation have been shown to influence how much relief patients report. More surprisingly, some patients improved after receiving pills openly labeled as placebos, with no attempt at deception. Such results complicate the idea that the effect depends on a false belief about the medicine. It should be stressed, however, that placebos mostly alter subjective symptoms such as pain and nausea. They do not shrink tumors or cure infections, and treating them as a substitute for effective medicine can be dangerous. The real lesson may be that the context of care is itself a kind of treatment, one that good medicine should use rather than dismiss.

13 **The findings about openly labeled placebos are important mainly because they _____.**

① show that patients are easily deceived by the rituals that surround treatment
② indicate that doctors should stop prescribing real medicine and rely on placebos
③ challenge the assumption that placebo effects require patients to be misled
④ prove that placebos can cure serious diseases without any deception

14 **Based on the passage, which patient would be LEAST likely to benefit from a placebo?**

① A patient experiencing persistent nausea after a major surgery
② A patient who reports anxiety and pain before a dental procedure
③ A patient suffering from chronic back pain that limits daily activity
④ A patient with a bacterial infection that requires antibiotics

15 **What is the author's attitude toward the placebo effect?**

① Appreciative but cautious, recognizing its value as well as its limits
② Uncritically enthusiastic, viewing it as a replacement for conventional drugs
③ Indifferent, since it has no real relevance to the practice of medicine
④ Dismissive, since it is only a form of trickery played on patients

독해 6 · When Efficiency Increases Demand

In 1865 the economist William Stanley Jevons noticed something puzzling about Britain's use of coal. Steam engines had become far more efficient, needing much less coal to perform the same work. One might expect total coal consumption to fall as a result, yet it rose sharply. Because each unit of work became cheaper, steam power became profitable in industries that had never used it before. The savings from efficiency were overwhelmed by the expansion in use that efficiency made possible. This pattern, known as the Jevons paradox, has reappeared with lighting, computing, and fuel-efficient cars. It does not mean that efficiency is futile, since in many markets demand is too limited for the effect to cancel all the gains. A household will not run its refrigerator twice as long simply because the machine uses half the electricity. The paradox matters most where cheaper use opens entirely new applications, which is why efficiency alone rarely guarantees lower total consumption.

16 The example of the refrigerator is used to _____.

① show a case in which the Jevons paradox is unlikely to occur strongly
② explain how steam engines and other machines reduced the use of coal
③ argue that greater efficiency always increases total consumption in the end
④ prove that households waste electricity when their appliances become efficient

17 In which of the following cases would the Jevons paradox most likely appear?

① A school replaces old heaters with more efficient ones but keeps the same heating schedule.
② A more efficient light bulb is installed in a closet that is rarely used by anyone.
③ A factory reduces its energy use and produces the same amount of goods as before.
④ Data storage becomes so cheap that people begin saving every photo and video they take.

18 Which of the following can be inferred from the passage?

① Coal consumption in Britain fell after 1865 because steam engines needed less fuel.
② Efficient technology always harms the environment because it encourages greater consumption.
③ Policies that rely only on improving efficiency may fail to reduce total energy use.
④ Jevons believed that coal should be replaced immediately by newer and more efficient sources of power.

독해 7 · The Ship That Was Rebuilt

An ancient puzzle asks us to imagine a ship whose wooden planks are replaced one at a time as they rot. After many years, not a single original plank remains, yet the ship has sailed continuously under the same name. Most people are inclined to say it is still the same ship. Now suppose someone had collected every discarded plank and assembled them into a second ship. This reassembled vessel is made of exactly the original material, arranged in exactly the original form. Which of the two, then, is the real ship? The puzzle is unsettling because it reveals that our idea of identity combines two criteria that normally coincide: continuity over time and sameness of material. In ordinary cases we never have to choose between them, so we never notice that they are distinct. The same split arises for living bodies, whose cells are steadily replaced, which is why the puzzle continues to interest philosophers of personal identity.

19 **According to the passage, why does the puzzle seem difficult?**

① People cannot remember clearly what the original ship looked like after so many years of repairs.
② Two standards we use for identity, which usually agree, are made to point in different directions.
③ Ancient ships were built from unusual materials that are difficult to identify today.
④ It is impossible to rebuild a working ship from old and rotten planks that were thrown away.

20 **Which situation creates a similar tension between the two criteria described in the passage?**

① A student moves to a new school in another city but keeps the same close friends.
② A company changes its logo but continues to sell exactly the same products to its customers.
③ A painting is moved from one museum to another, where it is displayed in a different room.
④ A band keeps its name after every founding member is replaced, while the original members form a new band.

21 **The author mentions living bodies at the end of the passage in order to _____.**

① prove that people never really change even as their cells are replaced
② show that the puzzle has implications beyond objects like ships
③ suggest that the puzzle has finally been solved by philosophers of personal identity
④ argue that cells are more important than planks for defining identity

독해 8 · Beyond the Tragedy of the Commons

In 1968 the ecologist Garrett Hardin argued that shared resources are doomed to destruction. Each herder grazing animals on a common pasture gains the full benefit of adding one more cow but bears only a fraction of the cost of overgrazing. Rational individuals, Hardin concluded, will exhaust the commons unless it is either privatized or controlled by the state. The political economist Elinor Ostrom spent decades showing that this conclusion was too pessimistic. She documented fisheries, forests, and irrigation systems that communities had managed sustainably for centuries without either solution. These communities shared certain features: clear boundaries, rules made by the users themselves, monitoring by people accountable to the group, and graduated penalties for violators. Ostrom's point was not that cooperation always succeeds, but that its success depends on institutions rather than on human nature alone. Hardin's herders failed because they had no way to communicate or to enforce agreements, a condition that real communities rarely accept for long.

22 **According to Ostrom, what is the key weakness in Hardin's model?**

① It assumes that people are irrational, when in fact herders act in their own interest.
② It focuses on pastures and ignores fisheries, forests, and irrigation systems entirely.
③ It overestimates the value of private property compared with state control of resources.
④ It ignores the possibility that users can create and enforce their own rules.

23 **Which of the following, if true, would most support Ostrom's view?**

① A lake shared by several villages was overfished after outsiders were allowed in without any limits.
② A forest that had been badly overcut was protected after the national government bought it.
③ A village whose members jointly set fishing limits and fine rule-breakers has kept fish stocks stable for generations.
④ A pasture recovered quickly after it was divided among several private owners.

24 **The phrase "a condition that real communities rarely accept for long" suggests that _____.**

① herders in real life are even more selfish than Hardin himself had assumed them to be
② Hardin's model accurately describes how most real communities manage shared land
③ real communities usually develop ways to talk and to make agreements binding
④ real communities generally prefer state control to cooperation among their members

독해 9 · When Results Refuse to Repeat

A scientific finding is supposed to be repeatable: if others follow the same method, they should observe the same result. In the 2010s, large projects attempted to repeat dozens of well-known psychology experiments and succeeded with only about half of them. Fraud explains very few of these failures. Far more common are small, often unconscious choices: stopping data collection once a result looks significant, or reporting the analysis that worked while quietly dropping the ones that did not. Each choice seems harmless, but together they make chance patterns look like discoveries. Journals have contributed by preferring surprising positive results, so studies that found nothing tended to stay in file drawers. In response, many researchers now register their hypotheses and analysis plans before collecting data. Some observers see the crisis as an embarrassment, but it can also be read as evidence that science's self-correcting machinery, though slow, does eventually work.

25 How does pre-registration of hypotheses address the problem described in the passage?

① It prevents researchers from choosing their analysis after seeing which one produces a significant result.
② It allows researchers to collect more data until their results finally reach significance.
③ It encourages journals to publish only the surprising positive findings that readers want.
④ It guarantees that every experiment will succeed and replicate when others repeat it.

26 Which of the following can be inferred about the "file drawers" mentioned in the passage?

① They contained mostly fraudulent studies that journals had refused to publish.
② They were destroyed by journal editors who wanted to hide failed experiments.
③ Their contents, if published, would have made some positive findings look less convincing.
④ They held the most important and surprising discoveries of the entire decade of research.

27 How does the author interpret the replication crisis in the final sentence?

① As a problem that has now been completely solved by the widespread practice of pre-registration
② As a sign that the scientific process can detect and correct its own errors
③ As proof that psychology is not a real science, since half its findings failed
④ As a scandal caused mainly by dishonest researchers who invented their data

독해 10 · The Mirror Neuron Story

In the 1990s researchers in Italy found neurons in monkeys that fired both when an animal grasped an object and when it watched another do the same. These "mirror neurons" quickly became famous far beyond neuroscience. Popular writers credited them with explaining empathy, language, imitation, and even the origins of civilization. The actual evidence was considerably narrower. Direct recordings from individual human neurons are rare, and the brain-imaging studies in humans measure the activity of large regions rather than of specific cells. Moreover, showing that a neuron responds during an action does not show that it causes our understanding of that action. Patients with damage to motor areas can often still recognize actions they can no longer perform. None of this means the discovery was unimportant; it was a genuine finding about how perception and action are linked. The episode illustrates how a striking result can be stretched to answer questions it was never designed to address.

28 What is the function of the sentence about patients with damage to motor areas?

① To show that mirror neurons do not exist in humans at all, only in monkeys

② To support the popular claim that mirror neurons explain empathy, language, and imitation

③ To provide evidence that understanding an action may not depend on the neurons used to perform it

④ To explain how damage to the brain's motor areas can be treated in patients

29 The author's main criticism is directed at _____.

① the cruel use of monkeys in experiments on the brain

② neuroscience as a whole and its reliance on brain-imaging methods

③ the exaggerated claims made on the basis of a limited discovery

④ the original researchers in Italy who first recorded these neurons in monkeys

30 Which of the following is an assumption underlying the author's argument?

① Popular writers are always wrong about science, since they exaggerate every new discovery they report.

② Brain-imaging technology will never improve enough to measure the activity of individual cells.

③ Monkeys and humans have completely different brains, so findings in one cannot apply to the other.

④ Neural activity that accompanies a behavior is not thereby shown to cause that behavior.

독해 11 · Too Many Options

A well-known experiment set up a tasting table in a grocery store, offering customers either six varieties of jam or twenty-four. The larger display attracted more visitors, but shoppers who saw only six flavors were far more likely to buy a jar. The result was widely cited as proof that too much choice paralyzes us. Later researchers, however, combined dozens of similar studies and found that the average effect was close to zero. Choice overload appeared in some conditions and vanished in others. It was most likely when options were hard to compare, when people had no clear preferences, and when they felt pressure to pick the single best item. Experts who know exactly what they want often welcome a large selection. The question, then, is not whether choice is good or bad, but under what circumstances more of it becomes a burden. A finding that once seemed universal turned out to depend heavily on context.

31 **Which of the following shoppers would be MOST likely to experience choice overload, according to the passage?**

① A first-time buyer trying to find the single best laptop among dozens of models with different, hard-to-compare features

② A person who is very hungry picking any snack at all from a crowded vending machine

③ A coffee expert choosing beans from a large selection of familiar varieties she knows well

④ A customer who always buys the same brand of toothpaste no matter how many brands are displayed

32 **What does the author suggest about the original jam experiment?**

① It was never repeated or tested again by any other researchers.

② It proved that people prefer fewer options in all situations, whatever they are buying.

③ Its result was overgeneralized beyond the conditions in which it occurred.

④ It was fraudulent and should be ignored by researchers who study choice.

33 **The main point of the passage is best expressed by which of the following?**

① Experts make better decisions than ordinary people when faced with a large selection.

② Stores should always offer fewer products, since larger displays reduce the chance of a sale.

③ Jam is a poor product for testing consumer behavior because preferences differ.

④ The effect of having many options depends on the situation and the chooser.

독해 12 · Cooling the City

On a summer afternoon, the center of a large city can be several degrees warmer than the surrounding countryside. Dark roofs and asphalt absorb sunlight and release it as heat, while buildings trap that heat and block cooling winds. Vegetation, which cools the air by releasing water through its leaves, is scarce in dense urban cores. This urban heat island is more than a matter of comfort, since heat waves kill more people than any other type of weather disaster in many countries. Cities have experimented with painting roofs white, planting trees, and covering rooftops with gardens. Each approach involves trade-offs. White roofs are cheap but do little for people at street level, where the heat is most dangerous. Street trees provide shade exactly where pedestrians need it, but they take years to mature and require water. The most vulnerable residents, often elderly people in poor neighborhoods with little greenery, gain the most from whichever measures reach their streets first.

34 **Based on the passage, which policy would best protect elderly residents during a heat wave next summer?**

① Painting the roofs of tall office buildings in the city center white
② Providing immediate shade and cooling centers in poor neighborhoods with little greenery
③ Banning cars from the countryside so that cooling winds can reach the city
④ Planting young trees throughout wealthy suburbs that already have plenty of shade

35 **Why does the author say white roofs "do little for people at street level"?**

① Because white roofs absorb more sunlight than dark roofs and release it at night
② Because white paint is too expensive for most buildings in poor neighborhoods to afford
③ Because roofs are far above the place where people are exposed to the most dangerous heat
④ Because street-level temperatures are always lower than those on the tops of buildings

36 **Which of the following can be inferred from the passage?**

① Increasing vegetation in a city center would likely reduce local temperatures.
② Heat waves are less dangerous than floods and storms in every country of the world.
③ Rural areas have no problems with heat because winds always cool the countryside.
④ Rooftop gardens require no maintenance once they have been planted on buildings.

독해 13 · Did the Press Cause the Reformation?

It is often said that the printing press caused the Protestant Reformation. There is truth in the claim: Martin Luther's pamphlets were reproduced in hundreds of thousands of copies, spreading his ideas faster than authorities could suppress them. Earlier reformers, whose writings had to be copied by hand, were far easier to silence. Yet the press had existed for more than sixty years before Luther, and it served the Catholic Church just as readily, printing indulgences and official doctrine. Many regions with thriving print shops remained Catholic. What the press did was to lower the cost of spreading ideas, which favored whoever had ideas that many people were ready to hear. Luther found a public already angered by church corruption and eager for religious texts in their own languages. Technology, in this view, is better understood as an amplifier than as a cause: it magnifies forces that already exist rather than creating them from nothing.

37 **The fact that many regions with thriving print shops remained Catholic is used to _____.**

① suggest that print shops in those regions were controlled by Catholic governments
② prove that printing was more popular among Catholics than among Protestant reformers
③ show that the printing press alone cannot explain the spread of the Reformation
④ argue that Luther's pamphlets were too poorly written to persuade readers there

38 **Which of the following situations best fits the author's view of technology as an "amplifier"?**

① A calculator makes people forget how to do arithmetic they once performed easily in their heads.
② A messaging app lets widespread existing frustration be organized into large protests much faster than before.
③ A factory machine replaces many workers, who then lose their jobs and must find new work.
④ A new social media platform invents, from nothing, a political movement that no one had previously supported.

39 **With which statement would the author most likely agree?**

① The press helped Luther, but the receptiveness of his audience was also essential.
② Without the printing press, Luther's ideas would still have spread just as fast as they did.
③ The printing press was irrelevant to the Reformation, which was driven by corruption alone.
④ The Catholic Church refused to use the printing press for its own doctrine.

독해 14 · Whose Body Is It?

The human body contains roughly as many bacterial cells as human ones, most of them living in the gut. These microbes help digest fiber, produce certain vitamins, and train the immune system to tell friend from foe. Studies in mice have linked changes in gut bacteria to obesity, anxiety-like behavior, and responses to medication. Such findings have inspired a wave of products promising to improve health by rebalancing the microbiome. Scientists themselves tend to be more cautious. Mice raised in sterile conditions differ greatly from people, and many human studies show only that certain bacteria appear alongside a disease, not that they produce it. The illness might change the bacteria rather than the other way around. Moreover, each person's microbial community is unique and fairly stable, so a probiotic capsule may pass through without establishing itself. The microbiome is a real frontier, but the distance between a promising association and a reliable treatment remains large.

40 **The sentence "The illness might change the bacteria rather than the other way around" points out the possibility of _____.**

① a possible new cure for the illness
② a sampling error in mouse studies
③ reverse causation between disease and bacteria
④ experimental fraud by researchers

41 **Which of the following, if true, would most strengthen the case for using a particular probiotic as a treatment?**

① The bacteria in the probiotic are found much more often in healthy people than in people who are sick.
② In a randomized trial against an identical-looking placebo, people given the probiotic recovered faster, and its bacteria persisted in their guts.
③ Sales of the probiotic have increased rapidly since doctors began recommending it to patients with digestive problems.
④ Mice raised in sterile conditions and given the probiotic gained noticeably less weight than other mice.

42 **The tone of the passage toward microbiome-based health products is best described as _____.**

① completely neutral and entirely uninterested
② enthusiastic and promotional
③ skeptical but not dismissive
④ hostile and mocking

독해 15 · Sleeping on It

For a long time sleep was regarded as a passive state in which the brain simply rested. Research now suggests that sleep plays an active role in turning fragile new memories into lasting ones. In rats that have learned a maze, the same sequences of neurons that fired during learning fire again during sleep, as if the day's route were being replayed. When this replay is disrupted, the rats perform worse the following day. In humans, people who sleep after studying a list of word pairs remember more of them than those who stay awake for the same length of time. Sleep does not preserve everything equally, however. It appears to favor information that the learner expects to need later and to extract general patterns while letting irrelevant details fade. This selectivity may explain why people sometimes wake with a solution to a problem that puzzled them the night before. For students, the implication is uncomfortable: an all-night study session may sacrifice the very process that makes studying stick.

43 Why is the experiment in which replay is disrupted important to the argument?

① It indicates that the maze was too difficult for rats to learn without enough sleep.
② It proves that rats and humans learn and remember in exactly the same way.
③ It suggests that replay during sleep is not merely a side effect but contributes to memory.
④ It shows that rats dislike being woken up and perform worse when they are tired.

44 According to the passage, which student is likely to remember the material best?

① One who studies in the evening, tells herself the material will be on tomorrow's test, and then sleeps
② One who studies all night before the exam without sleeping, so as to have more time to review everything
③ One who sleeps a full night first and then studies right before the exam begins
④ One who studies in the morning and stays awake and active for the rest of the day

45 What does the passage imply about forgetting during sleep?

① It is always a sign of poor or disrupted sleep that fails to replay the day's experiences.
② It may be part of a useful process that keeps general patterns while dropping unneeded details.
③ It happens only to word pairs, not to the routes that rats learn in mazes.
④ It affects only rats, not humans, whose memories are preserved equally during sleep.

독해 16 · The Hidden Majority

People sometimes express opinions in public that differ from those they hold in private. The economist Timur Kuran called this preference falsification and argued that it can make societies look far more stable than they are. If everyone who dislikes a regime keeps quiet out of fear, each person concludes that he or she is nearly alone in disliking it. Individuals differ, however, in how much support they need to see before they are willing to speak. A few will protest even alone; others will join only when ten percent have; still others only at fifty percent. When a small event pushes a handful of people into the open, those with slightly higher thresholds may follow, triggering others in turn. Opposition that seemed absent can then appear almost overnight. This helps explain why experts and even the participants themselves so often fail to predict revolutions. The information needed for prediction is precisely what people are hiding.

46 **According to the passage, why are revolutions difficult to predict?**

① Because experts are not really interested in politics and rarely study ordinary citizens

② Because regimes always collapse slowly, giving no clear signal of when the end will come

③ Because revolutions are caused by random events that no one can study or measure

④ Because the true distribution of private opinions and thresholds is concealed until people begin to act

47 **Suppose two societies have the same number of people who privately oppose their governments. Based on the passage, which factor would most likely make a sudden uprising possible in one but not the other?**

① The number of newspapers in each society and how freely they can report on the government

② The distribution of individual thresholds, such as whether enough people will follow those with slightly lower thresholds

③ The age of each government and how long it has managed to stay in power without challenge

④ The total population of each society, since larger societies contain more potential protesters

48 **The phrase "look far more stable than they are" implies that _____.**

① visible public support may hide substantial private dissatisfaction

② stable societies never experience revolutions, however unhappy their citizens are

③ governments are usually more popular than their critics are willing to admit

④ people always tell the truth about their opinions in private

독해 17 · Repairing Harm

Conventional criminal justice asks three questions: what law was broken, who broke it, and what punishment is deserved. Restorative justice asks different ones: who was harmed, what do they need, and whose obligation is it to meet those needs. In practice, this often means a facilitated meeting where offenders hear directly from the people they harmed and agree on ways to make amends. Supporters point to studies in which victims who took part reported less fear and anger than those whose cases went through the courts alone. Some programs have also been associated with lower rates of reoffending. Critics raise reasonable concerns. Victims may feel pressured to forgive, and offenders who participate voluntarily may already be those least likely to reoffend, which would make the programs look more effective than they are. Most advocates therefore present restorative practices as a complement to the courts rather than a replacement for them.

49 **The critics' point about voluntary participants is an example of concern about _____.**

① selection bias that could exaggerate a program's success
② the difficulty of defining harm when victims disagree
③ the high cost of running restorative programs alongside courts
④ victims refusing to attend meetings with their offenders

50 **Which of the following study designs would best answer the critics' concern?**

① Randomly assigning eligible offenders to restorative meetings or standard court processing and comparing reoffending rates
② Comparing the reoffending rates of offenders in countries that use different justice systems
③ Surveying only those victims who chose to attend meetings about how satisfied they felt
④ Asking offenders who completed the program whether they think it helped them stay out of trouble

51 **The final sentence suggests that most advocates of restorative justice _____.**

① think victims should never forgive offenders who have not been punished
② believe punishment is always wrong and should be replaced by meetings
③ want to abolish criminal courts once enough restorative programs have proven effective
④ acknowledge its limits and see it as working alongside traditional justice

독해 18 · Lost and Found in Translation

Lists of "untranslatable" words circulate widely: a German word for pleasure at another's misfortune, a Portuguese word for longing for something absent. Such lists suggest that each language contains feelings its neighbors cannot express. Yet every entry on these lists is followed by an English explanation that most readers understand perfectly well. What is missing is not the meaning but a single convenient word for it. The more serious difficulty of translation lies elsewhere, in features that cannot be paraphrased without being destroyed. A pun depends on the accident that two meanings share one sound; a poem's rhythm depends on the stresses of particular syllables. A translator can explain a joke, but an explained joke is no longer funny. Translation, then, rarely fails at conveying information; it struggles with effects that live in the form of the words themselves.

52 The author's argument against the popular lists of "untranslatable" words is that _____.

① translators are not skilled enough to find exact equivalents for words of feeling
② English has more words than any other language, so it can translate them all
③ the meanings of those words can in fact be expressed in other languages, though less concisely
④ the words on the lists are rarely used by native speakers in everyday conversation

53 Which of the following would be the HARDEST to translate according to the author?

① A newspaper headline that is a pun relying on two meanings of one word
② A scientific report on rainfall that uses many technical terms and measurements
③ A detailed recipe for bread with precise quantities and baking times
④ Directions to a train station through a city with many similar and confusing street names

54 What does the sentence "an explained joke is no longer funny" illustrate?

① That translators lack a sense of humor and should leave jokes untranslated
② That jokes should never be translated, because their meaning cannot be explained in another language
③ That humor is the same in all languages and needs no explanation
④ That some effects disappear when the content is preserved but the form is changed

독해 19 · Evolution in the Hospital

Antibiotic resistance is often described as bacteria "learning" to defeat our drugs, but no learning is involved. In any large population of bacteria, a few cells carry random mutations that happen to make them less vulnerable to a particular drug. When the drug is applied, it kills the susceptible majority and leaves the resistant few to multiply without competition. The drug does not create resistance; it selects for it. This is why stopping a course of antibiotics early can be risky, since it may remove the weakest bacteria while sparing those that are partially resistant. It is also why using antibiotics in livestock to speed growth worries public-health experts: every unnecessary use is an opportunity for selection. Resistance genes can even pass between different species of bacteria, so resistance that arises on a farm need not stay there. Understanding resistance as natural selection rather than learning clarifies the policy problem: the goal is not to outsmart bacteria but to reduce the pressure we place on them.

55 **The statement "The drug does not create resistance; it selects for it" means that _____.**

① the drug causes new mutations in bacteria that make them less vulnerable to it
② bacteria learn to recognize the drug and decide which ones to resist
③ resistant bacteria already exist, and the drug changes the population by removing the others
④ doctors select which bacteria to treat according to how resistant they are

56 **Based on the passage, which policy would best address the problem of resistance?**

① Restricting antibiotic use to cases of genuine medical need
② Developing a single powerful antibiotic and using it as widely as possible
③ Encouraging patients to stop taking antibiotics as soon as they feel better
④ Giving antibiotics to all farm animals to prevent disease and speed growth

57 **Why does the author mention that resistance genes can pass between species?**

① To explain why antibiotics work faster on farm animals than on human patients
② To prove that all bacteria belong to the same species despite their differences
③ To show that farm use of antibiotics can affect bacteria that infect humans
④ To argue that farms are cleaner places than hospitals and therefore safer for antibiotic use

독해 20 · Fitting the Noise

Suppose you want to predict tomorrow's temperature from past data. A simple model might use only the season and yesterday's temperature. A complex model might add hundreds of variables, from moon phases to the number of cars on the road, and adjust itself until it matches the historical record almost perfectly. Surprisingly, the complex model often predicts the future worse. Past data contain two things: real patterns that will recur and random fluctuations that will not. A model flexible enough to fit every bump in the record has learned the accidents along with the regularities, a problem called overfitting. The standard defense is to test a model on data it has never seen. If its accuracy collapses outside the training set, it has memorized rather than understood. The same trap awaits human experts who construct elaborate explanations for every past event, mistaking a perfect account of history for an ability to foresee what comes next.

58 **Why does the complex model often predict the future worse than the simple one?**

① Because simple models are always more accurate than complex ones, whatever the data
② Because moon phases and traffic have no effect on the weather at all
③ Because it uses too little historical data to detect the real seasonal patterns
④ Because it treats random fluctuations in past data as if they were real patterns

59 **A student memorizes the answers to every question in a practice book and scores 100 on it, but does poorly on the real exam with new questions. This case is most similar to _____.**

① an overfitted model whose accuracy collapses outside the training set
② a simple model that uses only the season and yesterday's temperature
③ a model that has been carefully tested on data it has never seen
④ a weather forecast that is always correct because it uses hundreds of variables

60 **What is the main point of the last sentence?**

① History should not be studied, since explanations of past events are always mistaken.
② Human experts are better than statistical models at predicting what will come next in history.
③ Experts should use more variables so that their explanations account for every past event.
④ Explaining the past in detail does not guarantee the ability to predict the future.

독해 21 · Who Owns the Past?

Many of the world's great museums hold objects that were taken from their places of origin during periods of colonial rule. Communities and governments in those places increasingly ask for them back. Museums have traditionally replied that they hold these objects in trust for all humanity, display them alongside works from other cultures, and protect them with expertise that may be lacking elsewhere. Each of these arguments has weakened. The claim to universal stewardship sits awkwardly with the fact that most of humanity cannot afford to visit the cities where these museums stand. And many countries requesting return now have modern museums fully capable of conservation. Defenders of the status quo also warn that returning one object will open the floodgates and empty their galleries. Yet this fear treats every acquisition as equivalent, ignoring the difference between an object bought from a willing seller and one seized after a military raid. A more defensible approach examines the history of each object, so that the question becomes not whether museums should return things, but which things and why.

61 The author's response to the "floodgates" argument is that it _____.

① proves that museums should keep everything they have ever acquired
② fails to distinguish between objects acquired in very different ways
③ is supported by most of the countries now requesting the return of objects
④ exaggerates the total number of objects that museums actually own

62 Which of the following best describes the structure of the passage?

① Traditional arguments are presented, each is challenged, and a case-by-case approach is recommended.
② Two historical examples of colonial seizure are compared and found to be essentially identical.
③ A problem is described, a solution is proposed, and that solution is finally rejected.
④ A theory about museums is introduced and then supported with statistics on visitors.

63 Which object would the author most likely consider the strongest candidate for return?

① A copy of an ancient statue made by the museum itself for display
② A sculpture removed from a palace by soldiers during an armed invasion
③ A modern vase donated to the museum by the artist who made it
④ A painting a museum purchased at a public auction from the artist's descendants

독해 22 · The Limits of a Famous Number

In the 1990s the anthropologist Robin Dunbar noticed that primates with larger neocortices tended to live in larger social groups. Extending the pattern to humans, he estimated that people can maintain stable relationships with about 150 others. The figure became remarkably popular, shaping the design of companies, military units, and online communities. A recent reanalysis using more data and modern statistical methods reached a sobering conclusion. Depending on reasonable choices about which species and measurements to include, the predicted human group size ranged from fewer than ten to more than five hundred. An estimate with such a wide margin, the authors argued, cannot support a specific number at all. Dunbar has defended his figure by pointing to surveys of personal networks that cluster around 150. Critics reply that what counts as a "stable relationship" is defined loosely enough to yield almost any number. The dispute shows how a precise-sounding figure can outlive the uncertainty of the evidence that produced it.

64 What is the critics' objection to Dunbar's survey evidence?

① The surveys found numbers far larger than 150, contradicting Dunbar's estimate.
② The relationships being counted are defined so vaguely that the results are not a strong test.
③ The surveys included too few people to produce any statistically reliable result.
④ The surveys were conducted only on primates, whose social lives differ greatly from those of humans.

65 The range "from fewer than ten to more than five hundred" is presented as evidence that _____.

① most people have about 150 friends, whatever methods are used
② social groups have grown steadily larger over the course of human history
③ humans have highly variable brains that differ greatly from those of other primates
④ the original estimate is extremely sensitive to analytic choices and therefore unreliable

66 Which lesson does the author draw from this debate?

① Social scientists should never publish specific numbers, since every estimate is somewhat uncertain.
② Online communities and companies should be limited to exactly 150 members.
③ A precise figure can stay popular long after its evidence proves weak.
④ Dunbar's number has been definitively proven correct by surveys of personal networks.

독해 23 · Why We Overvalue What We Own

In a classic experiment, half the students in a class were given coffee mugs and the other half were not. Owners were then asked how much they would accept to sell their mugs, and the others how much they would pay to buy one. Since the mugs had been distributed at random, standard economic theory predicted that about half of them would change hands. In fact, very few trades occurred, because owners demanded roughly twice what buyers were willing to pay. This gap, known as the endowment effect, is usually explained by loss aversion: giving up something we have feels worse than failing to gain the same thing. Later work found that the effect shrinks among experienced traders, who come to regard goods as things to be exchanged rather than kept. It also weakens when the object is a token valued only for its price, such as cash. The endowment effect, then, may depend less on ownership as such than on how people frame what they hold.

67 **Why did standard theory predict that about half the mugs would be traded?**

① Because the mugs were cheap, so owners would be willing to sell them for a very small amount of money

② Because random distribution leaves about half the mugs with people who value them less than some non-owner does

③ Because students generally prefer money to mugs and would sell at almost any price

④ Because buyers in a market always offer more than sellers ask, so trades are easy

68 **Which finding most directly suggests that the endowment effect is not simply a fixed feature of ownership?**

① Owners asked about twice as much as buyers offered.

② Experienced traders show a much smaller effect.

③ Very few trades occurred between owners and buyers.

④ The mugs were distributed at random.

69 **Based on the passage, which seller would most likely demand the highest price relative to the market value?**

① A wholesaler selling boxes of pens to stores in large quantities

② A professional car dealer selling a used car from his lot

③ A bank exchanging one currency for another at the daily rate

④ A family selling the house where they have lived for twenty years

독해 24 · Standing on Shoulders

No single person, however brilliant, could invent a smartphone from scratch. It depends on mathematics, metallurgy, chemistry, and electronics accumulated over thousands of years by countless people, most of them forgotten. Humans are distinctive less for individual intelligence than for cumulative culture: the ability to pass on improvements so that each generation begins where the last one finished. Chimpanzees use tools and even show local traditions, but their techniques rarely build on one another over generations. One explanation emphasizes faithful copying. Human children imitate adults precisely, even reproducing steps that serve no obvious purpose, while young chimpanzees skip such steps and go straight to the goal. The chimpanzees' strategy looks smarter in the moment, but precise copying preserves details whose value may not be apparent to the learner. Over many generations, those preserved details add up. The same research also suggests a vulnerability: a population that shrinks or becomes isolated can lose skills it no longer has enough teachers to maintain.

70 **According to the passage, why might the children's apparently "less intelligent" copying be advantageous?**

① It shows that children are more creative than chimpanzees when solving new problems.

② It prevents children from making any mistakes at all while they are learning a new skill from adults.

③ It helps children finish tasks faster by skipping steps that serve no purpose.

④ It preserves details that may turn out to be valuable even if their purpose is not understood.

71 **Which of the following situations best illustrates the vulnerability described in the last sentence?**

① An island community forgets how to build ocean-going boats after its population falls and contact with neighbors ends.

② A company hires more engineers and steadily improves the quality of its products over time.

③ A child learns to read much faster than her parents did at the same age.

④ A large city develops new technologies through regular trade with many other cities.

72 **The passage implies that the key difference between humans and chimpanzees lies in _____.**

① the existence of local traditions within a group

② the ability to accumulate improvements across generations

③ whether they use tools at all in daily life

④ the size and intelligence of their individual brains

독해 25 · Reading Deep Time

In the eighteenth century, most Europeans believed the Earth was only a few thousand years old. The Scottish geologist James Hutton, studying rock formations along the coast, reached a very different conclusion. At one site he found nearly vertical layers of rock topped by horizontal ones. He reasoned that the lower layers had first been laid down horizontally as sediment, then hardened, tilted, and worn away before new sediment settled on top. Watching how slowly sediment accumulates in the present, he concluded that such a sequence must have required an almost unimaginable span of time. His key assumption was that the processes shaping the Earth today are the same ones that shaped it in the past. Applied to the rocks before him, this simple principle turned a coastline into a record of ages. Later geologists would recognize that sudden catastrophes such as asteroid impacts also play a role, so Hutton's principle needed refinement. Yet his central insight survived: the present, carefully observed, is a key to an otherwise invisible past.

73 **Hutton's conclusion that the Earth is very old depended most directly on which assumption?**

① That the Earth was created in a single moment a few thousand years ago
② That asteroids frequently struck the Earth and reshaped its rock layers
③ That rock layers are always laid down in a vertical position
④ That sediment accumulated in the past at rates similar to those observed today

74 **Which discovery would most seriously challenge Hutton's reasoning about the particular site?**

① Evidence that Hutton visited the same stretch of coast many times over a period of several years
② Evidence that similar rock formations with tilted lower layers exist elsewhere in Scotland
③ Evidence that an ancient flood laid down the lower layers far faster than modern sediment
④ Evidence that the upper layers lie horizontally on top of the worn lower layers

75 **How does the author evaluate Hutton's principle overall?**

① As entirely mistaken once catastrophes were discovered
② As useful only for studying the history of coastlines
③ As a religious belief rather than a scientific idea
④ As essentially sound, though in need of modification

독해 26 · When Painting Lost Its Job

When photography appeared in the 1830s, some painters declared that their art was finished. For centuries, one of painting's main functions had been to record how people and places looked. A camera could now do this faster, more cheaply, and with a precision no hand could match. Portrait miniaturists, whose living depended on such work, did largely disappear. But painting as a whole did not die; it changed direction. Freed from the duty of exact representation, artists explored what a camera could not capture: the fleeting effects of light as the eye experiences them, the emotional distortion of color, the structure of forms seen from several angles at once. Some historians argue that modern art owes much of its character to this pressure. Others caution that artists were already experimenting for reasons of their own, and that photography accelerated rather than caused the change. Either way, the episode suggests that a new technology may transform an old practice rather than simply replace it.

76 What is the significance of the fact that portrait miniaturists "did largely disappear"?

① It shows that photography did eliminate the branch of painting devoted to exact recording.
② It indicates that most miniaturists simply became photographers when the camera appeared.
③ It proves that painting as a whole was destroyed by photography in the 1830s.
④ It suggests that photography was a failure because it could not replace portraits.

77 The disagreement between the two groups of historians concerns _____.

① whether modern art has any real artistic value compared with the realistic painting of earlier centuries
② whether photography was actually invented in the 1830s or at some earlier date
③ whether photography caused modern art's new direction or only sped up changes already under way
④ whether most painters welcomed photography or feared that it would take away their living

78 Which modern situation best parallels the author's conclusion?

① A factory closes because of low demand for its goods and its workers must look for jobs elsewhere.
② Automatic translation software leads human translators to focus more on literary and creative work that machines handle poorly.
③ A new phone model completely replaces an older one, which is no longer made or sold.
④ A city bans cars from its center, and residents switch to buses and bicycles instead.

독해 27 · Rule of Law, Rule by Law

A country can have many laws and still lack the rule of law. The distinction is between rule by law, in which those in power use legislation as a tool to govern others, and rule of law, in which the powerful are themselves bound by legal limits. Under rule by law, statutes may be detailed and courts may be busy, but a ruler can change the law whenever it becomes inconvenient or simply ignore it when it applies to allies. Scholars often list several conditions for the rule of law: laws must be public, prospective rather than retroactive, reasonably stable, and applied by independent courts to officials and citizens alike. None of these conditions guarantees that the laws are just. A stable, public, impartially applied law could still be cruel. Defenders of the concept accept this but argue that the rule of law has value of its own: it allows people to plan their lives and limits the arbitrary use of power. In this view it is a necessary but not sufficient condition for a just society.

79 **Which of the following situations would violate the rule of law but NOT necessarily rule by law?**

① Citizens follow traffic regulations that are published and enforced by the police.
② A government publishes all its laws and applies them equally to officials and citizens.
③ A government passes a law punishing people for actions they took before the law existed.
④ A court rules against a government minister who had ignored the law.

80 **The sentence "A stable, public, impartially applied law could still be cruel" serves to _____.**

① argue that the rule of law is worthless if the laws themselves are cruel
② suggest that laws should be kept secret to prevent their cruel application
③ show that the rule of law alone does not ensure justice
④ prove that impartial courts are cruel when they apply stable laws

81 **According to the defenders, what is one value of the rule of law even when laws are imperfect?**

① It eliminates the need for courts, since laws are applied automatically.
② It allows people to predict legal consequences and plan accordingly.
③ It gives rulers more freedom to act whenever the law becomes inconvenient.
④ It ensures that all laws are fair, even when they are imperfect.

독해 28 · Rethinking the Bystander

The idea that people in groups fail to help strangers became famous after a 1964 murder in New York, in which thirty-eight witnesses were reported to have done nothing. Later investigations found that the newspaper account was badly exaggerated: fewer people saw the attack, and some did call for help. Still, laboratory studies did find a bystander effect, showing that a single individual is more likely to help than any particular member of a group. A recent study took a different approach, analyzing hundreds of real public conflicts recorded by security cameras in several countries. In about nine out of ten cases, at least one bystander intervened, and the likelihood that someone helped rose with the number of people present. These findings need not contradict the laboratory work. Even if each individual in a crowd is somewhat less likely to act, the chance that at least one of many people acts can still be high. For a victim, it is this second probability that matters.

82 How does the author reconcile the camera study with the laboratory findings?

① By claiming the laboratory studies were fraudulent and should no longer be trusted

② By distinguishing between the probability that a given individual helps and the probability that anyone helps

③ By suggesting that security cameras change people's behavior and make them more willing to help

④ By arguing that people in different countries behave differently when they witness conflicts

83 Suppose each person in a group has a 20% chance of helping, while a lone person has a 50% chance. Based on the passage's reasoning, which statement is correct?

① The bystander effect proves that crowds of people never help victims in real emergencies.

② A victim is always safer with one bystander than with a group of five.

③ Each person in the group is more likely to help than the lone person.

④ With enough bystanders, the chance that at least one helps can exceed 50%.

84 What is the author's purpose in mentioning the later investigations of the 1964 case?

① To criticize the New York police for failing to respond to the calls

② To show that the story that popularized the bystander effect was inaccurate

③ To prove that no bystander effect exists in laboratories or in real life

④ To argue that newspapers should not report crimes they have not investigated

독해 29 · Paying to Pollute

Carbon offsets promise a simple bargain: an airline or a company that emits greenhouse gases can pay someone else to reduce emissions by an equal amount, often by protecting a forest. The difficulty lies in proving that the reduction really happened because of the payment. If a forest was never in danger of being cut, paying to protect it changes nothing, yet the buyer still claims credit. Determining what would have happened without the project requires predicting an alternative world that can never be observed. Project developers have an incentive to imagine that world as gloomily as possible, since a more threatened forest generates more credits to sell. Several investigations have concluded that many credits were based on exaggerated threats. There is also the question of permanence: carbon stored in a forest can return to the atmosphere if the forest later burns. None of this means that protecting forests is worthless. It means that offsets should be treated as a supplement to reducing one's own emissions, not as a permission slip to continue them.

85 **Why do project developers have an incentive to exaggerate threats to a forest?**

① Because buyers prefer to fund forests that are safe from any threat
② Because a forest assumed to be more threatened yields more credits to sell
③ Because governments require developers to exaggerate in their official reports
④ Because exaggerating threats makes the protected forests grow faster and store more carbon

86 **The central difficulty of carbon offsets, according to the passage, is that _____.**

① airlines and other large emitters refuse to buy them in sufficient numbers
② they are far too expensive for most small and medium companies to buy in meaningful amounts
③ forests cannot store carbon for long because they eventually burn
④ their benefit depends on comparison with a hypothetical situation that cannot be directly observed

87 **Which of the following would the author most likely approve of?**

① A company that buys large numbers of cheap, unverified offsets so that it can keep expanding its emissions
② A company that cuts its own emissions as much as possible and buys verified offsets for the remainder
③ A company that refuses to protect any forests because offsets are sometimes based on exaggerated threats
④ An airline that advertises itself as having no environmental impact at all because it buys offsets

독해 30 · Welcome to the New Wild

Conservation has traditionally aimed to restore ecosystems to some earlier, supposedly natural state, often defined as the condition before industrial development or European colonization. Some ecologists now question whether this goal is always achievable or even desirable. Climate change, they point out, is shifting the conditions under which species evolved, so a restored ecosystem may no longer suit its own location. Meanwhile, many places now host "novel ecosystems," mixtures of native and introduced species that have arisen without deliberate design. Some of these provide valuable services, such as stabilizing soil or supporting pollinators, and removing the newcomers can be costly and sometimes harmful. Critics fear that accepting novel ecosystems will give developers and governments an excuse to stop protecting intact habitats. If any mixture of species is acceptable, why bother preserving the original? Proponents reply that recognizing novel ecosystems is not the same as welcoming destruction; it is an attempt to manage the world as it is rather than as it once was.

88 What is the critics' main concern about accepting novel ecosystems?

① That climate change is not real and should not guide conservation
② That novel ecosystems are always harmful to the native species around them
③ That it could weaken the justification for protecting habitats that remain undisturbed
④ That introduced species cannot survive for long in a changing climate

89 Why might restoring an ecosystem to its historical state fail, according to some ecologists?

① Because historical records of what earlier ecosystems contained are always too inaccurate to follow
② Because changed climatic conditions may make the restored community poorly suited to the place
③ Because native species are always weaker competitors than introduced ones
④ Because restoring ecosystems is illegal in most countries without government permission

90 The proponents' reply in the last sentence relies on a distinction between _____.

① accepting changes that have already occurred and encouraging further destruction
② native species and introduced species that arrived without design
③ developers who build on wild land and governments that are supposed to protect it
④ soil stabilization and the support of pollinators

독해 31 · The Bilingual Advantage Debate

For years, studies suggested that bilingual people outperform monolinguals on tasks requiring self-control, such as ignoring irrelevant information. The explanation seemed intuitive: constantly suppressing one language while using the other might train a general mental control system. More recent and larger studies, however, have frequently failed to find the advantage. Researchers have noticed that early positive results tended to come from small samples, and that studies finding no difference were less likely to be published. Comparisons between groups also raise problems. In many countries bilingual and monolingual children differ in immigration history, family income, and schooling, any of which might affect test performance. Some scholars conclude that the advantage is a myth; others think it exists only under specific conditions, such as frequent switching between languages. What both sides agree on is that the case for learning a second language never depended on this effect. Being able to communicate with more people is a sufficient reason on its own.

91 **Why does the author mention differences in immigration history and family income?**

① To argue that immigration itself improves children's self-control and test performance
② To point out factors other than bilingualism that could explain differences in test scores
③ To prove that the bilingual advantage is real once family income is considered
④ To show that bilingual children are wealthier and attend better schools than others

92 **Which research design would best test whether bilingualism itself causes better self-control?**

① Comparing large samples of bilingual and monolingual children matched on income, schooling, and immigration background
② Publishing only the studies that find an advantage, since null results are less informative
③ Asking a large number of bilingual people whether they feel more self-controlled than others
④ Comparing bilingual and monolingual adults chosen at random from the street in a single city

93 **What is the point of the last two sentences?**

① Whatever the outcome of the debate, there remain strong reasons to learn a second language.
② Bilingual people communicate better than monolinguals in all situations, whatever their background.
③ The debate proves that learning a second language is a waste of time for most children.
④ Scientists should stop studying bilingualism because the results keep contradicting each other.

독해 32 · Being Sincere, Being Authentic

The literary critic Lionel Trilling distinguished two ideals that are easily confused: sincerity and authenticity. Sincerity means that what one says matches what one feels; it is a virtue exercised toward others, a promise not to deceive. Authenticity is more demanding and more inward. It asks whether the feelings themselves are truly one's own, rather than borrowed from convention or imposed by society. A person can be perfectly sincere while being inauthentic, honestly reporting emotions that he has absorbed without reflection from those around him. Trilling suggested that modern culture has shifted its admiration from the first ideal to the second. Where earlier ages praised the honest servant or the trustworthy friend, modern art often celebrates the rebel who refuses social roles in search of a truer self. The shift has costs as well as benefits. Sincerity binds us to others, while a relentless pursuit of authenticity can treat every obligation as a threat to the self.

94 **Which of the following people is sincere but NOT authentic, as the terms are used in the passage?**

① A woman who honestly says she wants a high-paying job, a desire she absorbed unquestioned from her parents

② An artist who rejects all social conventions in his work but carefully hides his true opinions from others

③ A man who lies about his real feelings so as to avoid hurting a close friend

④ A student who pretends to be interested in a subject she secretly dislikes

95 **What does the author imply about the modern emphasis on authenticity?**

① It is identical to the older ideal of sincerity.

② It has no disadvantages for individuals or society.

③ It was rejected by most modern artists.

④ It may weaken commitments to other people.

96 **The contrast between "the honest servant" and "the rebel" is used to illustrate _____.**

① a change in which personal qualities a culture most admires

② the decline of art and literature in modern times

③ the reasons why many servants eventually became rebels

④ the economic history of domestic work in earlier ages

독해 33 · Better Safe Than Sorry?

The precautionary principle holds that when an activity threatens serious harm, a lack of full scientific certainty should not be used as a reason to delay protective measures. It was designed for situations like ozone depletion, where waiting for conclusive proof would have meant waiting until the damage was irreversible. Critics argue that, applied strictly, the principle is incoherent. Almost every action, including inaction, carries some risk of serious harm. Banning a new pesticide may protect insects but reduce harvests; refusing a new drug may avoid side effects but leave patients without treatment. If precaution forbids every risky option, it forbids all options, and so offers no guidance at all. Defenders respond that the principle was never meant to be applied mechanically. Its purpose is to correct a particular bias in decision-making: the tendency to treat uncertain but potentially catastrophic and irreversible harms as if they were zero simply because they cannot yet be measured precisely.

97 What is the critics' central argument?

① Because inaction is also risky, a strict rule against risky actions would rule out every choice.
② The ozone problem was exaggerated, so precaution was never really needed in that case.
③ Scientific certainty is always available if decision-makers are willing to wait long enough.
④ Pesticides should never be banned, because doing so would reduce harvests.

98 According to the defenders, the precautionary principle is best understood as _____.

① a method for calculating the exact probabilities of uncertain and catastrophic harms
② a rule that forbids all new technologies and products until they are proven completely safe
③ a corrective against ignoring severe harms merely because they are hard to quantify
④ a demand for complete scientific certainty before any protective measure is taken

99 Which situation would the defenders most likely see as an appropriate use of the principle?

① Halting a minor change in product packaging because a single customer complained about it
② Refusing to approve any new medicine, regardless of how great its benefits might be
③ Restricting a chemical that early evidence suggests could permanently damage a major water supply
④ Waiting for complete and conclusive scientific proof before taking action to address any kind of risk

독해 34 · A Prediction That Made Itself True

In 1965 the engineer Gordon Moore observed that the number of transistors that could be placed on a chip was doubling roughly every year, a rate he later revised to every two years. The trend, known as Moore's law, held for about half a century. Unlike a law of physics, however, it described no natural necessity. Its persistence owed much to the fact that the industry adopted it as a target. Chip makers, equipment suppliers, and software developers planned their investments around the expected pace, and companies that fell behind it risked losing customers to those that kept up. In this sense the prediction helped produce the very progress it forecast. Coordination of this kind is valuable, because a complex industry needs shared expectations to move in step. But it also carries a danger: when physical limits finally made the old pace impossible, firms that had treated the trend as permanent found their plans suddenly obsolete.

100 In what sense was Moore's law "a prediction that made itself true"?

① Because the industry planned and competed around the predicted pace, it worked to achieve that pace.

② Moore personally controlled the entire chip industry and forced companies to follow his schedule.

③ Customers demanded exactly the predicted number of transistors in every new generation of chips.

④ The law was based on a fundamental property of physics that made the pace inevitable.

101 Which of the following is most analogous to the way Moore's law functioned?

① An astronomer predicting the exact date of a solar eclipse many years in advance

② A thermometer accurately measuring the temperature of a room as it rises and falls during the day

③ A rumor that a bank will fail leads depositors to withdraw their money, causing it to fail

④ A weather forecast that predicts heavy rain, after which people carry umbrellas to work

102 What danger does the author associate with this kind of prediction?

① Firms may forget the trend is not a permanent law and be unprepared when it ends.

② It discourages any investment, since firms fear that their products will soon be outdated.

③ It makes chips so cheap that manufacturers can no longer earn a reasonable profit from selling them.

④ It prevents companies from coordinating their plans with suppliers and software developers.

독해 35 · Were the Dark Ages Dark?

The phrase "Dark Ages" was coined by Renaissance scholars who saw themselves as reviving the brilliance of Greece and Rome after a long period of decline. The label reflected their own agenda as much as the evidence. It is true that after the collapse of Roman authority in the West, cities shrank, long-distance trade declined, and fewer written records survive. But "dark" increasingly describes what modern historians cannot see rather than what medieval people lacked. Monasteries preserved and copied classical texts, farmers adopted the heavy plow and new crop rotations, and scholars in the Islamic world advanced mathematics and medicine while maintaining contact with Europe. Many historians now prefer the more neutral term "early Middle Ages." The correction should not swing too far, however. Archaeological evidence shows real declines in living standards in parts of western Europe, including smaller cattle and fewer imported goods. The challenge is to describe loss and continuity together, without either romanticizing or dismissing the period.

103 **The statement that "dark" describes "what modern historians cannot see" suggests that _____.**

① medieval people lived in physical darkness because they lacked good lighting
② the scarcity of records may create an impression of decline that exceeds the reality
③ the Renaissance was itself a dark period that its own scholars misunderstood
④ modern historians are poorly trained in reading medieval documents and records

104 **Why does the author mention smaller cattle and fewer imported goods?**

① To prove that the Renaissance scholars were entirely right about the period
② To show that the period had no real achievements in farming or learning
③ To explain the origin of the phrase "Dark Ages" among Renaissance scholars
④ To caution against replacing one exaggeration with the opposite exaggeration

105 **Which statement best summarizes the author's position?**

① The early Middle Ages were a golden age that historians have unfairly criticized ever since the Renaissance.
② The early Middle Ages were a period of complete darkness in which nothing was achieved.
③ Renaissance scholars invented the Middle Ages to make their own era look brilliant.
④ The period involved both genuine decline and important continuity, and should be described with balance.

독해 36 · When Fairness Has Many Meanings

Algorithms increasingly help decide who receives a loan, who is interviewed for a job, and who is released before trial. Many people hope that such systems can be made fair, but researchers have discovered that "fair" has several mathematical meanings that cannot all be satisfied at once. One definition requires that a given risk score mean the same thing for every group: people labeled high-risk should reoffend at the same rate whatever their background. Another requires that people who will not reoffend be wrongly labeled high-risk at the same rate in every group. When the underlying rates of reoffending differ between groups, it can be proven that no imperfect system can meet both definitions simultaneously. This result does not show that fairness is impossible. It shows that choosing an algorithm involves choosing which kind of fairness matters most in a particular context, a decision that is ethical rather than technical. Leaving it to engineers alone hides a value judgment inside what looks like a neutral calculation.

106 **According to the passage, why can't both definitions of fairness be met together?**

① Because when groups have different base rates of reoffending, the two requirements conflict mathematically for any imperfect predictor

② Because algorithms are always biased by design, reflecting the prejudices of the engineers who build them

③ Because engineers lack the mathematical skills needed to build systems that satisfy both definitions

④ Because courts do not use risk scores when deciding who is released before trial

107 **What does the author conclude from this impossibility result?**

① Engineers should be the only ones to decide, since the underlying problem is purely mathematical in nature.

② Algorithms should never be used in decisions about people's loans, jobs, or freedom.

③ Fairness is an illusion, because no system can satisfy every definition at once.

④ Choosing a fairness standard is a value judgment that should not be disguised as a technical one.

108 **Which of the following would the author most likely support?**

① Public discussion involving affected communities about which errors are most harmful in a given setting

② Replacing all judges with algorithms, since machines apply a single standard consistently

③ Allowing a software company to choose the fairness definition privately and keep it secret

④ Ignoring differences in base rates so that every group is treated in exactly the same way

독해 37 · How Bees Choose a Home

When a honeybee colony grows too large, thousands of bees leave with the old queen and cluster on a branch while they search for a new home. A few hundred scouts fly out to inspect possible sites, such as hollow trees. A scout that finds a promising cavity returns and performs a dance whose vigor reflects the site's quality, recruiting others to go and look. Crucially, each scout's enthusiasm fades with every repetition, so even a strong supporter eventually stops dancing. A site keeps attracting supporters only if newly recruited bees inspect it independently and also find it good. When enough scouts are gathered at one site at the same time, the swarm takes off. The system rarely picks a poor site, because no single bee's opinion can dominate for long. The biologist Thomas Seeley has suggested that human committees could learn from the bees: encourage independent investigation, limit the influence of any single advocate, and seek a broad consensus rather than a quick one.

109 What is the function of the gradual fading of each scout's enthusiasm?

① It ensures that the old queen makes the final decision about the new site.
② It causes the swarm to choose whichever site is closest to the branch.
③ It saves the bees' energy for the long flight to their new home.
④ It prevents an early enthusiast from locking in a choice without confirmation by others.

110 Which human practice best reflects the bees' method as described by Seeley?

① The first option proposed is always accepted in order to save the committee's time.
② The loudest and most enthusiastic member of the committee makes the decision for everyone.
③ Members research options separately, report back, and decide only once broad agreement emerges.
④ A manager announces her choice first and then asks the team members to agree with it.

111 Why does the requirement that new recruits inspect a site "independently" matter?

① It ensures that only one bee visits each site, so no site is inspected twice.
② It makes the decision much faster, since bees do not need to wait for others.
③ It lets the swarm verify a site's quality through separate judgments rather than mere imitation.
④ It lets the old queen choose freely among all the different sites that the scouts have found.

독해 38 · The Power of Expectations

Inflation is often explained as too much money chasing too few goods, but central bankers have come to believe that expectations play a powerful role as well. If workers expect prices to rise by ten percent next year, they will demand raises of at least that size, and firms that expect higher costs will raise their prices in advance. The expectation of inflation thus helps to generate inflation. This is why many central banks announce explicit inflation targets, often around two percent. A credible target anchors expectations: if people believe the bank will act to keep inflation near its goal, they will set wages and prices accordingly, and the target becomes easier to reach. Credibility, however, must be earned. A central bank that abandons its target whenever doing so is politically convenient will find that announcements no longer move expectations. Restoring lost credibility can be painful, sometimes requiring interest rates high enough to cause a recession. The value of a reputation, in other words, lies precisely in the costs one has shown oneself willing to bear to protect it.

112 **According to the passage, how does a credible inflation target help keep inflation low?**

① By shaping the expectations on which people base their wage and price decisions
② By increasing the amount of money in circulation so that goods become cheaper
③ By directly lowering the prices of goods that the central bank controls
④ By legally preventing workers from asking their employers for raises

113 **Which of the following would most likely weaken a central bank's credibility?**

① Repeatedly allowing inflation to stay far above the target before elections in order to boost growth
② Raising interest rates sharply whenever inflation rises above its announced target
③ Keeping its inflation target unchanged for many years, even through periods when economic growth slows down considerably
④ Publishing its forecasts and the reasoning behind its decisions regularly

114 **What is the meaning of the last sentence?**

① Central banks should avoid all costs, including recessions, when they try to protect their reputations.
② A reputation is valuable because others have seen its holder accept real costs to keep it.
③ Recessions are always necessary for any central bank that wants to keep inflation firmly under control.
④ Reputations are worthless because protecting them costs too much, sometimes even a recession.

독해 39 · The Uses of Nostalgia

The word nostalgia was coined by a Swiss physician in the seventeenth century to describe a disease he observed in soldiers serving far from home. For centuries afterward it was regarded as a disorder, associated with weakness and an inability to adapt. Recent psychological research has painted a more favorable picture. People who are prompted to recall a nostalgic memory tend afterward to report greater feelings of social connection, a stronger sense that life is meaningful, and more optimism about the future. Nostalgia seems to arise especially when people feel lonely or uncertain, suggesting that it may function as a resource for coping rather than a symptom of failure to cope. The typical nostalgic memory, moreover, is not purely happy. It often begins with difficulty and ends in a moment of closeness with others, a narrative of redemption rather than escape. Not all nostalgia is benign, however. Collective longing for an idealized national past can fuel hostility toward those blamed for its loss, showing that the same emotion can bind people together or divide them.

115 **The observation that nostalgia arises especially in lonely or uncertain moments is used to support which claim?**

① Lonely people should avoid thinking about the past because it deepens their sadness.
② Nostalgia may be a way that people respond to and manage difficult feelings.
③ Uncertainty always produces optimism about the future in people who are lonely.
④ Nostalgia is a disease caused by loneliness, as the Swiss physician first argued.

116 **Which of the following best illustrates the "narrative of redemption" described in the passage?**

① Forgetting an unpleasant event entirely so that only happy memories of the past remain
② Remembering a perfect vacation with family in which nothing at all went wrong from start to finish
③ Recalling a difficult first year at a new school that ended with making a close friend
④ Imagining a future in which one becomes rich and finally escapes all difficulties

117 **What is the purpose of the final sentence?**

① To show that nostalgia only affects individuals and never whole nations or groups
② To prove that every nation's history is always idealized by those who long for it
③ To argue that nostalgia should once again be regarded as a dangerous disease, as it was for centuries
④ To qualify the positive view of nostalgia by noting that its collective forms can have harmful effects

독해 40 · When Science Changes Its Mind

In 1962 the historian Thomas Kuhn challenged the picture of science as a steady accumulation of facts. Most of the time, he argued, scientists work within a paradigm, a shared framework that defines which problems are worth solving and what counts as a solution. During such periods of "normal science," results that conflict with the paradigm are usually treated as errors or puzzles to be solved later, not as refutations. Only when anomalies accumulate and resist explanation does a crisis develop, sometimes ending in a revolution in which a new paradigm replaces the old. Kuhn's most controversial claim was that rival paradigms can be incommensurable: they may define key terms differently and disagree about which evidence matters, so that no neutral standard decides between them. Critics charged that this made science irrational, a matter of fashion or persuasion. Kuhn denied this, insisting that scientists still weigh accuracy, simplicity, and fruitfulness, even if these values cannot be combined by a mechanical rule. Theory choice, on his account, is reasoned but not algorithmic.

118 **According to Kuhn, how do scientists in a period of normal science usually treat an unexpected result?**

① As proof that science is irrational and driven by fashion
② As a decisive refutation of the paradigm that must be abandoned at once
③ As a puzzle or error to be explained within the existing framework
④ As a reason to abandon science in favor of a rival paradigm

119 **What does "Theory choice … is reasoned but not algorithmic" mean?**

① Scientists never change their theories, however many anomalies they encounter over time.
② Computers should choose scientific theories, since they can apply rules more consistently than people.
③ Scientists choose theories randomly or by fashion, because no neutral standard exists.
④ Scientists choose between theories for good reasons, but no fixed formula yields the answer automatically.

120 **Which of the following best describes how Kuhn responded to his critics?**

① He claimed that one neutral standard always exists for deciding between rival paradigms.
② He argued that the absence of a mechanical decision rule does not make scientific judgment irrational.
③ He agreed that science is merely a matter of fashion and persuasion, as critics charged.
④ He withdrew the idea of paradigms entirely and returned to the older view of science as steady accumulation.

Try Exam

정답과 해설

편입 실전 독해 40

정답

1 ④	2 ①	3 ③	4 ②	5 ④
6 ④	7 ②	8 ④	9 ④	10 ①
11 ②	12 ②	13 ③	14 ④	15 ①
16 ①	17 ④	18 ③	19 ②	20 ④
21 ②	22 ④	23 ③	24 ③	25 ①
26 ③	27 ②	28 ③	29 ③	30 ④
31 ①	32 ③	33 ④	34 ②	35 ③
36 ①	37 ③	38 ②	39 ①	40 ③
41 ②	42 ③	43 ③	44 ①	45 ②
46 ④	47 ②	48 ①	49 ①	50 ①
51 ④	52 ③	53 ①	54 ④	55 ③
56 ①	57 ③	58 ④	59 ①	60 ④
61 ②	62 ①	63 ②	64 ②	65 ④
66 ③	67 ②	68 ②	69 ④	70 ④
71 ①	72 ②	73 ④	74 ③	75 ④
76 ①	77 ③	78 ②	79 ③	80 ③
81 ②	82 ②	83 ④	84 ②	85 ②
86 ④	87 ②	88 ③	89 ②	90 ①
91 ②	92 ①	93 ①	94 ①	95 ④
96 ①	97 ①	98 ③	99 ③	100 ①
101 ③	102 ①	103 ②	104 ④	105 ④
106 ①	107 ④	108 ①	109 ④	110 ③
111 ③	112 ①	113 ①	114 ②	115 ②
116 ③	117 ④	118 ③	119 ④	120 ②

해설

1. ④ 마지막 세 문장은 '우리 반응이 틀렸고 둘 다 똑같이 책임 있다'는 해결책을 끝까지 밀면 성격·의도까지 운의 영역이 되어 책임 자체가 사라진다는 곤란한 결론을 보여줘요. 즉 그 해결책의 대가를 지적하는 기능이에요. ②·①은 저자가 주장하지 않았고, ③은 오히려 의도도 운이라고 했으니 반대예요.

2. ① 도덕적 운은 '행동은 같고 통제할 수 없는 상황 때문에 결과가 달라졌는데 비난이 달라지는' 경우예요. ①의 두 의사는 같은 실수를 했지만 환자의 알레르기라는 우연 때문에 한 명만 책임을 져요. ③·②·④는 행동의 차이가 결과의 차이를 만든 일반적인 경우예요.

3. ③ 글쓴이는 '통제할 수 있는 것만 평가한다'는 원칙을 끝까지 적용하면 평가할 것이 남지 않는다고 말해요. 따라서 그 원칙만으로 문제를 풀 수 없다는 ③에 동의할 거예요. ②는 글쓴이가 소개한 '한 가지 대응'일 뿐 지지한 입장이 아니에요.

4. ② 글쓴이는 측정이 쓸모없다는 게 아니라(③은 오답) 단일 목표가 가장 값싼 달성 방법을 부추긴다고 해요. 따라서 여러 지표를 쓰고 숫자 개선이 실제 개선인지 확인하는 ②가 글의 교훈에 맞아요. ①은 글에서 다루지 않은 처방이에요.

5. ④ 죽은 뱀 수라는 지표에 보상을 걸었더니 사육이라는 행동이 생겨 뱀이 오히려 늘었어요. 지표에 붙은 보상이 원래 목표를 무너뜨린 사례예요. ①은 지나친 일반화예요.

6. ④ 바로 다음 문장에서 '숫자는 개선되지만 실제는 그대로이거나 나빠진다'고 했어요. 시험 요령만 가르쳐 점수는 오르지만 과목 이해는 늘지 않을 수 있다는 뜻이에요.

7. ② 돌아온 비행기에 엔진 피격 흔적이 없다는 것은 엔진에 맞은 비행기가 돌아오지 못했다는 뜻이에요. 표본에서 '빠진' 정보를 읽어 낸 추론이에요.

8. ④ 신문에 나온 당첨자만 보고 결론을 내리면 매주 사고도 당첨되지 않은 수많은 사람을 빠뜨리게 돼요. 살아남은(눈에 띈) 사례만 보는 생존자 편향이에요. ③·①은 오히려 편향을 피한 설계이고, ②는 다른 종류의 주의점이에요.

9. ④ 폭격기, 경영서에 이어 건물을 예로 든 것은 같은 오류가 일상적 판단에도 나타난다는 것을 보여 주기 위해서예요. 저자는 옛 건물이 실제로 더 낫다고 칭찬하지 않아요.

10. ① 숫자를 속으로 반복해 언어 체계를 막으면 이점이 사라졌다는 건, 그 이점이 지각할 때 언어(색 단어)를 실시간으로 쓰는 데서 나왔다는 증거예요. 시력 차이였다면 언어를 막아도 이점이 남았을 거예요.

11. ② 글쓴이는 영어 화자도 차이를 '분명히' 볼 수 있다고 했어요. 단어가 없으면 지각 자체가 불가능하다는 강한 주장을 거부해요. 나머지는 '온건한 형태'와 일치해요.

12. ② 'nudging attention without imprisoning perception'은 언어가 주의를 이끌기는 하지만 지각을 가두지는(한정하지는) 않는다는 대비예요. 영향과 제약을 구분하는 거예요.

13. ③ 위약이라고 알려 줘도 호전되었다는 것은 '잘못된 믿음(속임)이 필요하다'는 통념을 흔들어요. 바로 다음 문장이 그 의미를 설명해요.

14. ④ 위약은 통증·메스꺼움 같은 주관적 증상을 주로 바꾸며 감염을 치료하지 못한다고 했어요. 세균 감염 환자에게는 위약 효과가 거의 의미가 없어요.

15. ① 글쓴이는 돌봄의 맥락을 치료로 활용하라고 하면서도(가치 인정) 대체물로 쓰면 위험하다고 경고해요(한계 인식). 균형 잡힌 태도예요.

16. ① 냉장고는 효율이 올라도 사용량이 거의 늘지 않는 '수요가 제한된' 예예요. 역설이 약하게 나타나는 경우를 보여 주려는 거예요. ③은 글쓴이가 부정한 내용이에요.

17. ④ 역설은 더 싸진 사용이 '새로운 용도'를 열어 줄 때 가장 강해요. 저장 비용이 내려가자 모든 사진·영상을 저장하는 새 행동이 생겨 총사용량이 늘 수 있어요. 나머지는 사용량이 그대로인 경우예요.

18. ③ 마지막 문장에서 효율만으로는 총소비 감소가 거의 보장되지 않는다고 했으니, 효율 개선에만 의존하는 정책은 실패할 수 있다고 추론할 수 있어요. ②는 지나친 일반화, ①은 본문과 반대예요.

19. ② 평소에는 일치하는 '연속성'과 '재료의 동일성'이라는 두 기준이 이 사례에서는 서로 다른 배를 가리키게 되기 때문에 어려워요.

20. ④ 이름을 이어 온 밴드(연속성)와 원래 멤버들이 만든 새 밴드(구성 요소의 동일성)가 갈라져서, 어느 쪽이 '진짜' 밴드인지 같은 긴장이 생겨요.

21. ② 몸의 세포도 계속 교체된다는 점을 들어, 이 문제가 배 같은 사물을 넘어 인격 동일성 문제로 이어진다는 것을 보여 줘요.

22. ④ 하딘의 목동들은 소통하고 합의를 강제할 방법이 없다고 가정되었어요. 오스트롬은 실제 공동체가 스스로 규칙을 만들고 감시·처벌한다는 점을 보여 줬어요.

23. ③ 오스트롬의 주장은 국가나 사유화 없이도 이용자 스스로의 규칙과 처벌로 공유 자원을 지킬 수 있다는 거예요. ③이 바로 그 사례예요. ②·④는 하딘의 두 해결책이고, ①은 경계가 없을 때 실패한 사례예요.

24. ③ '소통·강제 수단이 없는 상태'를 실제 공동체는 오래 받아들이지 않는다는 말은, 대개 소통하고 합의를 지키게 할 방법을 만들어 낸다는 뜻이에요.

25. ① 문제는 결과를 본 뒤 '효과가 있었던 분석'만 고르는 선택이었어요. 미리 가설과 분석 계획을 등록하면 결과를 보고 분석을 고르는 일이 막혀요.

26. ③ 서랍에 남은 것은 '아무것도 발견하지 못한' 연구들이에요. 이것들이 발표되었다면 출판된 긍정적 결과가 우연일 가능성이 드러나 덜 설득력 있어 보였을 거라고 추론할 수 있어요.

27. ② 마지막 문장은 위기를 '느리지만 결국 작동하는 자기 수정 장치'의 증거로 읽을 수 있다고 해요. ④는 사기가 극히 일부만 설명한다는 본문과 어긋나요.

28. ③ 운동 영역이 손상되어 행동을 못 해도 그 행동을 알아본다면, 행동 이해가 그 행동을 수행하는 신경 체계에 꼭 의존하지는 않는다는 증거가 돼요. 바로 앞 문장(반응 ≠ 원인)을 뒷받침해요.

29. ③ 글쓴이는 발견 자체는 진정한 발견이라고 인정하고, 그것이 원래 다루지 않은 질문까지 설명한다고 부풀려진 점을 비판해요.

30. ④ 글쓴이는 '반응한다는 것이 원인임을 보여 주지 않는다'는 데 기대고 있어요. 즉 상관관계만으로 인과를 확립할 수 없다는 전제가 깔려 있어요. ③·①·②는 지나친 진술이에요.

31. ① 과부하는 비교하기 어렵고, 선호가 불분명하고, 단 하나의 최선을 고르려는 압박이 있을 때 잘 생겨요. ①이 세 조건을 모두 갖췄어요. ③은 원하는 것을 아는 전문가예요.

32. ③ 한 번의 결과가 '너무 많은 선택은 우리를 마비시킨다'는 보편 법칙처럼 인용되었지만 실제로는 조건에 따라 달랐어요. 과잉 일반화되었다는 거예요. 사기라는 말은 없어요.

33. ④ 마지막 두 문장이 요지예요. 선택의 많고 적음이 좋은지 나쁜지가 아니라 어떤 상황에서 부담이 되는지의 문제라는 거예요.

34. ② 가장 취약한 사람은 녹지가 적은 가난한 동네의 노인이고, 그들은 자기 거리에 '먼저' 닿는 조치에서 가장 큰 혜택을 얻어요. 나무는 자라는 데 오래 걸리고, 흰 지붕은 거리 수준에 별 도움이 안 되므로 ②가 가장 적절해요.

35. ③ 흰 지붕은 높은 곳의 열을 줄이지만, 위험한 열에 노출되는 곳은 사람이 걷는 거리예요. 지붕과 거리의 위치 차이 때문이에요.

36. ① 식물은 잎으로 물을 내보내 공기를 식히는데 도심에는 드물다고 했으므로, 식물을 늘리면 온도가 내려갈 것이라고 추론할 수 있어요. ②는 본문과 반대예요.

37. ③ 인쇄소가 많아도 가톨릭으로 남은 지역이 있다면, 인쇄기만으로 종교 개혁의 확산을 설명할 수 없어요. '인쇄기 원인론'에 대한 반례예요.

38. ② 증폭기 관점은 기술이 '이미 있는 힘'을 키운다는 거예요. 이미 퍼져 있던 불만을 더 빨리 조직하게 해 준 ②가 맞아요. ④는 무에서 만들어 낸 경우라 정반대예요.

39. ① 글쓴이는 인쇄기의 역할(빠른 확산)을 인정하면서도, 이미 분노하고 준비된 대중이 있었기 때문에 효과가 있었다고 봐요. ④는 교회도 인쇄기를 썼다는 본문과 반대예요.

40. ③ 세균이 병을 일으킨 게 아니라 병이 세균을 바꿨을 수도 있다는 건 인과 방향이 거꾸로일 가능성, 즉 역인과예요.

41. ② 글쓴이가 지적한 한계는 동물 연구의 한계, 상관관계, 정착 실패예요. 무작위 대조 실험에서 효과가 있고 세균이 실제로 장에 정착했다는 ②가 세 문제를 모두 해결해요. ①은 상관관계, ④는 무균 쥐 연구예요.

42. ③ '진정한 미개척 분야'라고 인정하면서도 치료까지는 거리가 멀다고 해요. 회의적이지만 무시하지는 않는 태도예요.

43. ③ 재생을 방해하자 다음 날 수행이 떨어졌다는 것은 재생이 그냥 부수적 현상이 아니라 기억 형성에 실제로 기여한다는 증거예요. 단순히 '재생이 일어난다'보다 강한 인과적 증거예요.

44. ① 공부 후 잠을 자면 더 잘 기억하고, 잠은 나중에 필요하리라 '예상하는' 정보를 우선한다고 했어요. 공부 후 시험에 나온다고 생각하며 잔 ①이 가장 유리해요.

45. ② 잠은 관련 없는 세부 사항을 희미해지게 두면서 일반 패턴을 추출한다고 했어요. 그런 망각은 유용한 과정의 일부라는 뜻이에요.

46. ④ 마지막 문장처럼 예측에 필요한 정보(사적 의견과 문턱)가 바로 사람들이 숨기는 것이라 미리 알 수 없어요.

47. ② 연쇄는 문턱이 조금씩 높은 사람들이 차례로 이어져야 일어나요. 반대자 수가 같아도 문턱 분포가 끊기면 연쇄가 멈추고, 이어지면 폭발적으로 퍼져요.

48. ① 겉으로 보이는 지지가 위장일 수 있으므로, 사회가 겉보기보다 불안정할 수 있다는 뜻이에요.

49. ① 원래 재범 가능성이 낮은 사람들이 스스로 참여한다면, 낮은 재범률이 프로그램 효과가 아니라 참여자 선별 때문일 수 있어요. 선택 편향이에요.

50. ① 자발적 참여의 선별 문제를 없애려면 무작위 배정이 필요해요. 그래야 두 집단의 차이를 프로그램 효과로 볼 수 있어요.

51. ④ 대체가 아닌 보완으로 제시한다는 것은 한계를 인정하고 기존 사법과 함께 작동하는 것으로 본다는 뜻이에요.

52. ③ 목록마다 독자가 잘 이해하는 영어 설명이 붙어 있다는 점을 들어, 의미는 전달되고 '한 단어'가 없을 뿐이라고 반박해요. 덜 간결할 뿐 표현은 가능하다는 거예요.

53. ① 글쓴이는 정보 전달이 아니라 단어의 형식에 사는 효과, 특히 소리가 같은 두 의미를 이용한 말장난이 어렵다고 했어요.

54. ④ 설명하면 내용(의미)은 전달되지만 형식이 바뀌어 웃음이라는 효과가 사라져요. 형식에 사는 효과의 예시예요.

55. ③ 내성 돌연변이는 이미 우연히 존재하고, 약이 취약한 다수를 제거해 그 소수가 퍼지게 한다는 뜻이에요. 약이 돌연변이를 만드는 것이 아니에요.

56. ① 글쓴이는 목표가 세균에 가하는 '선택 압력을 줄이는 것'이라고 했어요. 불필요한 사용을 줄이는 ①이 맞아요. ②·④는 압력을 키우고, ③은 위험하다고 했어요.

57. ③ 농장에서 생긴 내성이 '거기에 머물 필요가 없다'고 했으니, 농장 사용이 사람을 감염시키는 세균에도 영향을 줄 수 있다는 것을 보여 주려는 거예요.

58. ④ 복잡한 모델은 모든 굴곡에 맞추다가 반복되지 않을 우연(무작위 변동)까지 패턴처럼 학습해요. ①은 '항상'이라는 과장이에요.

59. ① 연습 문제(학습 데이터)에서는 완벽하지만 새 문제(본 적 없는 데이터)에서 무너졌으니, 이해하지 않고 암기한 과적합 모델과 같아요.

60. ④ 과거를 완벽히 설명하는 것을 미래 예측 능력으로 착각한다고 했어요. 상세한 사후 설명이 예측력을 보장하지 않는다는 거예요.

61. ② 글쓴이는 그 두려움이 모든 취득을 동등하게 취급해 자발적 구매와 약탈을 구분하지 못한다고 반박해요.

62. ① 박물관의 전통적 논거(인류를 위한 보관, 전문성, 봇물 우려)를 소개하고 하나씩 반박한 뒤, 물건마다 내력을 살피는 접근을 제안해요.

63. ② 글쓴이는 자발적 판매와 군사 습격 후 탈취를 구분해요. 무력 침략 중 군인이 가져간 조각이 반환 요구의 가장 강한 근거가 돼요.

64. ② 비판자들은 '안정적 관계'의 정의가 느슨해 거의 어떤 수치든 나올 수 있다고 해요. 정의가 모호하면 조사 결과가 강한 검증이 될 수 없다는 뜻이에요.

65. ④ 합리적인 선택만 바꿔도 결과가 10 미만에서 500 이상까지 흔들린다면 추정이 분석 선택에 극도로 민감해 믿을 수 없다는 뜻이에요.

66. ③ 마지막 문장에서 정확해 보이는 수치가 그 근거의 불확실성보다 오래 살아남을 수 있다고 했어요.

67. ② 무작위로 나눴다면 머그를 덜 원하는 사람이 가진 경우가 절반쯤 될 것이고, 그들이 더 원하는 비소유자에게 팔아 약 절반이 거래될 거라는 예측이에요.

68. ② 소유가 같아도 숙련 거래자에게서는 효과가 줄어든다면, 효과는 소유 자체보다 물건을 어떻게 인식하는지(교환용인지)에 달려 있다는 증거예요. ①·③은 효과의 존재를 보여 줄 뿐이에요.

69. ④ 효과는 물건을 교환용이 아니라 '간직할 것'으로 볼 때 커져요. 20년 산 집을 파는 가족이 가장 강하게 보일 거예요. ②·③·①은 교환이 일상인 경우예요.

70. ④ 정확한 모방은 학습자가 목적을 몰라도 가치 있는 세부를 보존하고, 그것이 세대를 거쳐 쌓여요. 순간적으로는 비효율적이어도 누적에 유리하다는 거예요.

71. ① 인구가 줄고 고립되어 가르칠 사람이 부족해져 기술을 잃는 사례예요. 마지막 문장의 취약성과 정확히 일치해요.

72. ② 침팬지도 도구와 지역 전통이 있지만, 기술이 세대를 거쳐 쌓이지 않는다고 했어요. 핵심 차이는 누적 능력이에요.

73. ④ 현재 퇴적 속도가 느리다는 관찰을 과거에 적용해야 '엄청난 시간'이라는 결론이 나와요. 과거와 현재의 과정이 같다는 가정이 핵심이에요.

74. ③ 허턴의 추론은 과거 퇴적 속도가 현재처럼 느렸다는 데 기대요. 과거에 훨씬 빨리 쌓였다는 증거가 나오면 '엄청난 시간'이라는 결론이 약해져요.

75. ④ 대재앙의 역할 때문에 다듬을 필요가 있었지만 핵심 통찰은 살아남았다고 해요. 본질적으로 옳지만 수정이 필요하다는 평가예요.

76. ① 정확한 기록에 생계를 의존하던 세밀화가는 사라졌어요. 기술이 회화 중 '기록 기능'에 가장 직접 연결된 부분은 실제로 없앴다는 것을 보여 줘요. 전체가 죽지는 않았다는 다음 문장과 대비돼요.

77. ③ 한쪽은 현대 미술이 사진의 압력에 빚졌다고, 다른 쪽은 사진이 이미 진행 중이던 변화를 '가속'했을 뿐이라고 봐요. 원인이냐 가속이냐의 차이예요.

78. ② 기계가 일상적 번역을 맡자 사람 번역가가 기계가 못 하는 문학적 작업으로 방향을 바꾸는 것은, 사진 이후 회화가 대체되지 않고 변형된 것과 같은 구조예요.

79. ③ 소급 처벌은 '장래를 향해야 한다'는 법의 지배 조건을 어기지만, 권력자가 법을 도구로 쓰는 법에 의한 지배에서는 얼마든지 일어날 수 있어요. ②·④는 오히려 법의 지배에 부합해요.

80. ③ 형식적 조건을 다 갖춰도 법의 내용이 잔인할 수 있다는 것으로, 법의 지배만으로는 정의가 보장되지 않음을 보여 줘요. 다음 문장에서 그래도 고유한 가치가 있다고 하니 ①은 오답이에요.

81. ② 옹호자들은 법의 지배가 사람들이 삶을 계획하게 하고 자의적 권력을 제한한다고 했어요. 법적 결과를 예측할 수 있게 한다는 ②예요.

82. ② 개인 각자가 도울 확률은 집단에서 낮아질 수 있지만, 많은 사람 중 '누구라도' 도울 확률은 높을 수 있다고 구분해 두 결과를 조화시켜요.

83. ④ 각자 20%라도 사람이 많아지면 '적어도 한 명'이 도울 확률은 커져요(예: 4명이면 약 59%). 글의 추론을 적용한 결과예요.

84. ② 방관자 효과를 유명하게 만든 이야기 자체가 과장되었음을 보여 주려는 거예요. 바로 다음 문장에서 실험실 효과는 있었다고 하므로 ③은 오답이에요.

85. ② 위협받는 숲일수록 더 많은 크레디트가 생기고 팔 수 있으므로, 대안적 세계를 암울하게 가정할 경제적 유인이 있어요.

86. ④ 감축이 지불 때문인지 증명하려면 사업이 없었을 때의 '관찰 불가능한 대안적 세계'와 비교해야 해요. 이것이 핵심 난점이에요.

87. ② 글쓴이는 상쇄를 자기 배출 감축의 '보충'으로 쓰라고 했어요. 먼저 최대한 줄이고 나머지만 검증된 상쇄로 채우는 ②가 맞아요. ①·④는 허가증처럼 쓰는 경우예요.

88. ③ 비판자들은 어떤 혼합이든 괜찮다면 원래 서식지를 지킬 이유가 약해져 보호를 그만둘 핑계가 된다고 우려해요.

89. ② 기후 변화로 종들이 진화한 조건이 바뀌어 복원된 생태계가 그 장소에 더 이상 맞지 않을 수 있다고 했어요.

90. ① 지지자들은 신생태계 인정(이미 일어난 변화를 현실로 관리)과 파괴 환영(더 많은 파괴 조장)은 다르다고 구분해요.

91. ② 두 집단이 이민 이력·소득·교육에서도 다르다면 점수 차이가 이중 언어 때문이 아니라 이 요인들 때문일 수 있어요. 교란 변수를 지적한 거예요.

92. ① 교란 요인(소득·교육·이민)을 맞추고 큰 표본을 쓰면 글에서 지적한 두 문제(작은 표본, 집단 차이)를 함께 줄일 수 있어요.

93. ① 이점 논쟁의 결론과 상관없이 더 많은 사람과 소통할 수 있다는 것 자체가 충분한 이유라는 거예요.

94. ① 진실성은 말과 감정이 일치하는 것이고, 진정성은 그 감정이 진짜 자기 것인지예요. ①은 느끼는 대로 정직하게 말하지만(진실) 그 욕구는 성찰 없이 부모에게서 흡수한 것(비진정)이에요. ③·④는 진실하지 않아요.

95. ④ 마지막 문장에서 진정성의 끈질긴 추구가 모든 의무를 자아에 대한 위협으로 볼 수 있다고 했어요. 타인에 대한 헌신을 약화할 수 있다는 뜻이에요.

96. ① 이전 시대의 정직한 하인(진실성)과 현대의 반항아(진정성)를 대비해 문화가 찬탄하는 덕목이 바뀌었음을 보여 줘요.

97. ① 무행동도 위험하므로, 위험한 선택지를 모두 금지하면 모든 선택지가 금지되어 지침이 되지 못한다는 거예요.

98. ③ 옹호자들은 그 원칙이 측정이 어렵다는 이유로 파국적 해를 0처럼 취급하는 편향을 바로잡기 위한 것이라고 해요. ④는 원칙과 정반대예요.

99. ③ 원칙의 대상은 불확실하지만 심각하고 돌이킬 수 없는 해예요. 상수원을 영구적으로 오염시킬 수 있는 화학 물질이 그 조건에 맞아요. ①은 사소한 위험, ②는 기계적 적용이에요.

100. ① 업계가 예측된 속도를 목표로 삼아 투자와 경쟁을 맞췄기 때문에 그 속도가 실현되었어요. ④는 '자연적 필연성이 없다'는 본문과 반대예요.

101. ③ 예측(소문)이 사람들의 행동을 바꿔 예측이 현실이 되는 자기실현적 예언이에요. ④·①은 예측이 결과에 영향을 주지 않는 경우예요.

102. ① 추세를 영구 법칙처럼 여긴 기업들은 물리적 한계로 속도가 끝나자 계획이 쓸모없어졌어요.

103. ② 기록이 적어서 현대 역사가들이 잘 볼 수 없는 것을 '어둡다'고 부른다는 말로, 자료 부족이 실제보다 큰 쇠퇴의 인상을 줄 수 있다는 뜻이에요.

104. ④ '수정이 너무 멀리 가서는 안 된다'는 문장 다음에 실제 쇠퇴 증거를 들어, 암흑시대 신화를 반박하다가 반대로 미화하지 말라고 경고해요.

105. ④ 마지막 문장처럼 상실과 연속성을 함께, 낭만화하지도 무시하지도 않고 균형 있게 묘사해야 한다는 입장이에요.

106. ① 기저 재범률이 다를 때 불완전한 시스템은 두 정의를 동시에 충족할 수 없다는 것이 수학적으로 증명된다고 했어요.

107. ④ 공정성이 불가능한 게 아니라, 어떤 공정성을 택할지가 윤리적 결정이며 엔지니어에게만 맡기면 가치 판단을 숨기게 된다고 했어요.

108. ① 공정성 선택은 윤리적 결정이고 숨겨져서는 안 되므로, 영향을 받는 사람들이 참여하는 공개 논의를 지지할 거예요. ③은 가치 판단을 숨기는 것이에요.

109. ④ 열정이 줄어들기 때문에 한 벌이 계속 지배할 수 없고, 새 벌들이 독립적으로 확인해야 지지가 유지돼요. 확인 없는 조기 결정을 막는 장치예요.

110. ③ 독립적 조사, 한 옹호자의 영향 제한, 폭넓은 합의가 실리의 교훈이에요. ③이 그대로예요. ④·②는 한 사람이 지배하는 방식이에요.

111. ③ 새 벌이 직접 가서 독립적으로 판단해야, 단순한 따라 하기가 아니라 여러 개의 별개 판단으로 장소의 질이 검증돼요.

112. ① 신뢰할 만한 목표는 기대를 고정시키고, 사람들이 그 기대에 맞춰 임금과 가격을 정하기 때문에 목표 달성이 쉬워져요.

113. ① 정치적으로 편리할 때마다 목표를 버리면 발표가 기대를 움직이지 못한다고 했어요. 선거 전 반복적으로 목표를 무시하는 ①이 신뢰를 해쳐요.

114. ② 평판의 가치는 그것을 지키려고 기꺼이 비용(예: 경기 침체를 부를 고금리)을 감당한 모습을 보여 준 데서 나온다는 뜻이에요.

115. ② 외롭거나 불확실할 때 생긴다는 점을 대처 실패의 증상이 아니라 '대처 자원'으로 해석하는 근거로 써요.

116. ③ 어려움으로 시작해 타인과의 친밀함으로 끝나는 이야기가 '구원의 서사'예요. ②는 순전히 행복한 기억이라 다르다고 했어요.

117. ④ 앞에서 노스탤지어의 긍정적 기능을 말한 뒤, 집단적 형태는 적대감을 부추길 수 있다고 해 긍정적 견해에 단서를 달아요.

118. ③ 정상 과학 시기에는 충돌하는 결과를 반증이 아니라 오류나 나중에 풀 수수께끼로 취급한다고 했어요.

119. ④ 정확성·단순성·생산성 같은 이유로 판단하므로 합리적이지만, 그것들을 기계적으로 결합하는 공식은 없다는 뜻이에요.

120. ② 쿤은 기계적 규칙이 없다고 해서 과학적 판단이 비합리적인 것은 아니라고, 여전히 여러 가치를 저울질한다고 응답했어요. ①은 공약 불가능성과 모순돼요.

해석 · Moral Luck

We usually assume that people should be judged only for what lies within their control.
우리는 보통 사람은 자신이 통제할 수 있는 것에 대해서만 평가받아야 한다고 가정한다.

Yet consider two drivers who both glance at their phones for the same two seconds on the same road.
그러나 같은 도로에서 똑같이 2초 동안 휴대폰을 힐끗 본 두 운전자를 생각해 보라.

One arrives home without incident, while the other strikes a child who has suddenly run into the street.
한 명은 아무 일 없이 집에 도착하지만, 다른 한 명은 갑자기 길로 뛰어든 아이를 친다.

Their conduct was identical, and the difference in outcome was produced entirely by circumstances neither could foresee.
그들의 행동은 똑같았고, 결과의 차이는 전적으로 둘 중 누구도 예견할 수 없었던 상황이 만들어 냈다.

Nevertheless, almost no one thinks the two deserve equal blame, and the law punishes the second driver far more severely.
그럼에도 두 사람이 똑같은 비난을 받아야 한다고 생각하는 사람은 거의 없으며, 법은 두 번째 운전자를 훨씬 더 엄하게 처벌한다.

Philosophers call this tension moral luck: the way factors beyond our control seem to shape the praise and blame we receive.
철학자들은 이 긴장을 도덕적 운이라고 부르는데, 우리가 통제할 수 없는 요인들이 우리가 받는 칭찬과 비난을 좌우하는 것처럼 보이는 방식이다.

One response is to insist that our reactions are simply mistaken and that both drivers are equally culpable.
한 가지 대응은 우리의 반응이 그냥 틀렸으며 두 운전자 모두 똑같이 책임이 있다고 주장하는 것이다.

The difficulty is that the same reasoning, pushed far enough, threatens to dissolve responsibility altogether.
문제는 같은 추론을 충분히 밀고 나가면 책임 자체가 아예 사라질 위험이 있다는 점이다.

Our characters, after all, were formed by genes and upbringings we did not choose, so even our intentions are partly a matter of luck.
결국 우리의 성격은 우리가 선택하지 않은 유전자와 양육으로 형성되었으므로, 우리의 의도조차 부분적으로는 운의 문제다.

If only what is fully controlled can be judged, it is unclear that anything remains to be judged at all.
완전히 통제된 것만 평가할 수 있다면, 평가할 무엇인가가 남아 있는지조차 분명하지 않다.

해석 · Goodhart's Law

When a government wanted to reduce the number of cobras in a colonial city, it began paying a reward for every dead snake.
한 정부가 식민지 도시의 코브라 수를 줄이고 싶었을 때, 죽은 뱀 한 마리마다 보상금을 지급하기 시작했다.

At first the policy appeared to work, as residents brought in large numbers of carcasses.
처음에는 주민들이 많은 사체를 가져오면서 정책이 효과가 있는 것처럼 보였다.

Soon, however, enterprising citizens began breeding cobras in order to collect the reward.
그러나 곧 수완 좋은 시민들이 보상금을 받으려고 코브라를 사육하기 시작했다.

When officials discovered the scheme and cancelled the program, the breeders released their worthless snakes, leaving the city with more cobras than before.
관리들이 그 계략을 알아채고 프로그램을 취소하자, 사육자들은 쓸모없어진 뱀들을 풀어 주었고 도시에는 전보다 더 많은 코브라가 남았다.

Whether or not the story is literally true, it captures a principle that the economist Charles Goodhart observed in monetary policy.
이 이야기가 문자 그대로 사실이든 아니든, 그것은 경제학자 찰스 굿하트가 통화 정책에서 관찰한 원리를 잘 담고 있다.

A measure that once tracked something we care about tends to lose that connection once people are rewarded for improving the measure itself.
한때 우리가 중시하는 무언가를 잘 추적하던 지표는, 사람들이 그 지표 자체를 개선하는 데 대해 보상받는 순간 그 연결을 잃는 경향이 있다.

Hospitals judged by waiting times may keep patients in ambulances outside the door, and schools judged by test scores may teach the test rather than the subject.
대기 시간으로 평가받는 병원은 환자를 문밖 구급차에 머물게 할 수 있고, 시험 점수로 평가받는 학교는 과목이 아니라 시험을 가르칠 수 있다.

In each case the number improves while the reality it was meant to reflect stays the same or grows worse.
각 경우에 숫자는 개선되지만 그 숫자가 반영해야 할 실제는 그대로이거나 더 나빠진다.

The lesson is not that measurement is useless, but that any single target invites people to find the cheapest way of hitting it.
교훈은 측정이 쓸모없다는 것이 아니라, 어떤 단일 목표든 사람들에게 그것을 맞힐 가장 값싼 방법을 찾도록 부추긴다는 것이다.

해석 · The Survivors We Study

During the Second World War, analysts examined bombers that returned from missions and mapped where they had been hit.
2차 세계대전 중 분석가들은 임무에서 돌아온 폭격기를 조사하여 어디에 피격되었는지 지도로 그렸다.

The obvious proposal was to add armor to the areas most covered with bullet holes.
뻔한 제안은 총알 구멍이 가장 많은 부분에 장갑을 덧대는 것이었다.

The statistician Abraham Wald argued the opposite, pointing out that the sample contained only planes that had survived.
통계학자 에이브러햄 왈드는 그 표본에 살아 돌아온 비행기만 포함되어 있다고 지적하며 정반대를 주장했다.

Holes in the wings showed where a plane could be damaged and still return; the untouched engines showed where a hit was fatal.
날개의 구멍은 비행기가 손상되고도 돌아올 수 있는 곳을 보여 주었고, 손상되지 않은 엔진은 피격이 치명적인 곳을 보여 주었다.

The missing planes, in other words, carried the most important information precisely because they were missing.
다시 말해, 돌아오지 못한 비행기들이 바로 돌아오지 못했기 때문에 가장 중요한 정보를 지니고 있었다.

This error, now called survivorship bias, appears whenever we draw conclusions from the cases that happen to remain visible.
오늘날 생존자 편향이라 불리는 이 오류는 우연히 눈에 보이게 남은 사례들로부터 결론을 끌어낼 때마다 나타난다.

Business books that study successful companies to identify the habits of winners rarely examine the failed firms that shared those very habits.
성공한 기업을 연구해 승자의 습관을 찾아내는 경영서들은 바로 그 습관을 공유했던 실패한 기업들을 거의 살펴보지 않는다.

Likewise, the claim that old buildings were better made ignores the fact that the poorly made ones fell down long ago.
마찬가지로 옛 건물이 더 잘 지어졌다는 주장은 형편없이 지어진 건물들이 오래전에 무너졌다는 사실을 무시한다.

The remedy is to ask, before trusting any pattern, what the evidence would look like if the failures had been counted too.
해결책은 어떤 패턴을 믿기 전에 실패 사례들까지 셌다면 증거가 어떻게 보였을지 묻는 것이다.

해석 · Words for Colors

Russian speakers must choose between two basic words for blue, one for lighter shades and one for darker ones.
러시아어 화자는 파란색을 나타내는 두 기본 단어, 즉 밝은 색조를 위한 것과 어두운 색조를 위한 것 중에서 골라야 한다.

English speakers, by contrast, can call both simply "blue" without any sense of inaccuracy.
반면 영어 화자는 둘 다 그냥 'blue'라고 불러도 부정확하다는 느낌이 전혀 없다.

Researchers have found that Russian speakers are slightly faster at telling apart two blues that fall on different sides of their linguistic boundary.
연구자들은 러시아어 화자가 자기 언어의 경계 양쪽에 걸친 두 파란색을 구별하는 데 약간 더 빠르다는 것을 발견했다.

Interestingly, this advantage disappears when participants are asked to repeat a string of numbers silently during the task.
흥미롭게도 이 이점은 참가자들에게 과제 수행 중 숫자열을 속으로 반복하라고 하면 사라진다.

Occupying the verbal system in this way seems to block the help that the color words were providing.
이렇게 언어 체계를 바쁘게 만드는 것은 색 단어가 주던 도움을 차단하는 것처럼 보인다.

Such findings support a modest version of the idea that language shapes thought.
이러한 발견은 언어가 사고를 형성한다는 생각의 온건한 형태를 뒷받침한다.

They do not show that English speakers cannot see the difference between light and dark blue, which they plainly can.
그것들은 영어 화자가 밝은 파랑과 어두운 파랑의 차이를 볼 수 없다는 것을 보여 주지 않는데, 영어 화자는 분명히 볼 수 있다.

What they suggest is that words act as quick tools that the mind recruits when they are available, nudging attention without imprisoning perception.
그것들이 시사하는 것은, 단어가 가용할 때 마음이 동원하는 빠른 도구로 작용하여 지각을 가두지 않으면서 주의를 살짝 이끈다는 것이다.

해석 · Expecting to Heal

The placebo effect is often described as patients being fooled into feeling better by sugar pills.
위약 효과는 흔히 환자가 설탕 알약에 속아 나아졌다고 느끼는 것으로 묘사된다.

That description captures something real, but it overlooks how much of the effect lies in the ritual surrounding treatment.
그 묘사는 실제 무언가를 포착하지만, 효과의 상당 부분이 치료를 둘러싼 의식에 있다는 점을 간과한다.

In several studies, injections produced stronger placebo responses than pills, and expensive-looking pills outperformed cheap ones.
여러 연구에서 주사가 알약보다 강한 위약 반응을 일으켰고, 비싸 보이는 알약이 싼 알약보다 효과가 좋았다.

Even a doctor's warmth and the length of the consultation have been shown to influence how much relief patients report.
심지어 의사의 따뜻함과 진료 시간도 환자가 보고하는 완화 정도에 영향을 주는 것으로 나타났다.

More surprisingly, some patients improved after receiving pills openly labeled as placebos, with no attempt at deception.
더 놀랍게도, 일부 환자는 속이려는 시도 없이 위약이라고 공개적으로 표시된 알약을 받은 후 호전되었다.

Such results complicate the idea that the effect depends on a false belief about the medicine.
이러한 결과는 그 효과가 약에 대한 잘못된 믿음에 달려 있다는 생각을 복잡하게 만든다.

It should be stressed, however, that placebos mostly alter subjective symptoms such as pain and nausea.
그러나 위약은 주로 통증과 메스꺼움 같은 주관적 증상을 바꾼다는 점을 강조해야 한다.

They do not shrink tumors or cure infections, and treating them as a substitute for effective medicine can be dangerous.
위약은 종양을 줄이거나 감염을 치료하지 못하며, 그것을 효과적인 약의 대체물로 취급하는 것은 위험할 수 있다.

The real lesson may be that the context of care is itself a kind of treatment, one that good medicine should use rather than dismiss.
진짜 교훈은 돌봄의 맥락 자체가 일종의 치료이며, 좋은 의학은 그것을 무시할 것이 아니라 활용해야 한다는 것일지 모른다.

해석 · When Efficiency Increases Demand

In 1865 the economist William Stanley Jevons noticed something puzzling about Britain's use of coal.
1865년 경제학자 윌리엄 스탠리 제번스는 영국의 석탄 사용에 관해 이상한 점을 발견했다.

Steam engines had become far more efficient, needing much less coal to perform the same work.
증기 기관은 훨씬 효율적이 되어 같은 일을 하는 데 훨씬 적은 석탄이 필요했다.

One might expect total coal consumption to fall as a result, yet it rose sharply.
그 결과 총 석탄 소비가 줄 것이라고 예상할 수 있지만, 그것은 급격히 늘었다.

Because each unit of work became cheaper, steam power became profitable in industries that had never used it before.
일 한 단위가 더 저렴해졌기 때문에 증기력은 이전에 그것을 써 본 적 없는 산업들에서도 수익성이 생겼다.

The savings from efficiency were overwhelmed by the expansion in use that efficiency made possible.
효율에서 생긴 절약은 효율 덕분에 가능해진 사용 확대에 압도되었다.

This pattern, known as the Jevons paradox, has reappeared with lighting, computing, and fuel-efficient cars.
제번스 역설로 알려진 이 패턴은 조명, 컴퓨팅, 연비 좋은 자동차에서도 다시 나타났다.

It does not mean that efficiency is futile, since in many markets demand is too limited for the effect to cancel all the gains.
이는 효율이 헛되다는 뜻이 아닌데, 많은 시장에서는 수요가 너무 제한적이어서 그 효과가 모든 이득을 상쇄하지 못하기 때문이다.

A household will not run its refrigerator twice as long simply because the machine uses half the electricity.
냉장고가 전기를 절반만 쓴다고 해서 가정이 냉장고를 두 배로 오래 돌리지는 않을 것이다.

The paradox matters most where cheaper use opens entirely new applications, which is why efficiency alone rarely guarantees lower total consumption.
이 역설은 더 싼 사용이 완전히 새로운 용도를 열어 주는 곳에서 가장 중요하며, 그래서 효율만으로는 총소비 감소가 거의 보장되지 않는다.

해석 · The Ship That Was Rebuilt

An ancient puzzle asks us to imagine a ship whose wooden planks are replaced one at a time as they rot.
고대의 한 수수께끼는 나무판자가 썩을 때마다 하나씩 교체되는 배를 상상해 보라고 한다.

After many years, not a single original plank remains, yet the ship has sailed continuously under the same name.
여러 해가 지나면 원래의 판자는 하나도 남지 않지만, 그 배는 같은 이름으로 계속 항해해 왔다.

Most people are inclined to say it is still the same ship.
대부분의 사람은 그것이 여전히 같은 배라고 말하고 싶어 한다.

Now suppose someone had collected every discarded plank and assembled them into a second ship.
이제 누군가 버려진 판자를 모두 모아 두 번째 배로 조립했다고 가정해 보자.

This reassembled vessel is made of exactly the original material, arranged in exactly the original form.
다시 조립된 이 배는 정확히 원래의 재료로, 정확히 원래의 형태로 배열되어 만들어졌다.

Which of the two, then, is the real ship?
그렇다면 둘 중 어느 것이 진짜 배인가?

The puzzle is unsettling because it reveals that our idea of identity combines two criteria that normally coincide: continuity over time and sameness of material.
이 수수께끼가 불안하게 하는 것은 정체성에 대한 우리의 관념이 평소에는 일치하는 두 기준, 즉 시간에 따른 연속성과 재료의 동일성을 결합하고 있음을 드러내기 때문이다.

In ordinary cases we never have to choose between them, so we never notice that they are distinct.
평범한 경우에 우리는 둘 중에서 선택할 필요가 없으므로 그것들이 별개라는 것을 결코 알아채지 못한다.

The same split arises for living bodies, whose cells are steadily replaced, which is why the puzzle continues to interest philosophers of personal identity.

같은 분열이 세포가 꾸준히 교체되는 살아 있는 몸에서도 생기며, 그래서 이 수수께끼는 계속 인격 동일성을 연구하는 철학자들의 관심을 끈다.

해석 · Beyond the Tragedy of the Commons

In 1968 the ecologist Garrett Hardin argued that shared resources are doomed to destruction.
1968년 생태학자 개릿 하딘은 공유 자원은 파괴될 운명이라고 주장했다.

Each herder grazing animals on a common pasture gains the full benefit of adding one more cow but bears only a fraction of the cost of overgrazing.
공유 목초지에서 가축을 방목하는 각 목동은 소를 한 마리 더 추가하는 이익을 모두 얻지만, 과도한 방목의 비용은 일부만 부담한다.

Rational individuals, Hardin concluded, will exhaust the commons unless it is either privatized or controlled by the state.
하딘은 합리적인 개인들은 공유지가 사유화되거나 국가가 통제하지 않으면 그것을 고갈시킬 것이라고 결론 내렸다.

The political economist Elinor Ostrom spent decades showing that this conclusion was too pessimistic.
정치경제학자 엘리너 오스트롬은 수십 년 동안 이 결론이 지나치게 비관적이라는 것을 보여 주었다.

She documented fisheries, forests, and irrigation systems that communities had managed sustainably for centuries without either solution.
그녀는 공동체들이 두 해결책 어느 것도 없이 수 세기 동안 지속 가능하게 관리해 온 어장, 숲, 관개 시스템을 기록했다.

These communities shared certain features: clear boundaries, rules made by the users themselves, monitoring by people accountable to the group, and graduated penalties for violators.
이 공동체들은 몇 가지 특징을 공유했는데, 명확한 경계, 이용자 스스로 만든 규칙, 집단에 책임지는 사람들에 의한 감시, 위반자에 대한 단계적 처벌이었다.

Ostrom's point was not that cooperation always succeeds, but that its success depends on institutions rather than on human nature alone.
오스트롬의 요점은 협력이 항상 성공한다는 것이 아니라, 그 성공이 인간 본성만이 아니라 제도에 달려 있다는 것이었다.

Hardin's herders failed because they had no way to communicate or to enforce agreements, a condition that real communities rarely accept for long.
하딘의 목동들은 소통하거나 합의를 강제할 방법이 없었기 때문에 실패했는데, 실제 공동체는 그런 조건을 오래 받아들이는 경우가 드물다.

해석 · When Results Refuse to Repeat

A scientific finding is supposed to be repeatable: if others follow the same method, they should observe the same result.
과학적 발견은 반복 가능해야 한다. 다른 사람들이 같은 방법을 따르면 같은 결과를 관찰해야 한다.

In the 2010s, large projects attempted to repeat dozens of well-known psychology experiments and succeeded with only about half of them.
2010년대에 대규모 프로젝트들이 잘 알려진 심리학 실험 수십 개를 반복하려고 시도했으나 그중 절반 정도만 성공했다.

Fraud explains very few of these failures.
사기는 이러한 실패 중 극히 일부만 설명한다.

Far more common are small, often unconscious choices: stopping data collection once a result looks significant, or reporting the analysis that worked while quietly dropping the ones that did not.
훨씬 흔한 것은 작고 종종 무의식적인 선택들인데, 결과가 유의미해 보이는 순간 데이터 수집을 멈추거나, 효과가 있었던 분석을 보고하고 그렇지 않은 분석은 슬그머니 빼 버리는 것이다.

Each choice seems harmless, but together they make chance patterns look like discoveries.
각 선택은 무해해 보이지만, 합쳐지면 우연한 패턴을 발견처럼 보이게 만든다.

Journals have contributed by preferring surprising positive results, so studies that found nothing tended to stay in file drawers.
학술지들은 놀라운 긍정적 결과를 선호함으로써 이에 일조했고, 그래서 아무것도 발견하지 못한 연구들은 서랍 속에 남는 경향이 있었다.

In response, many researchers now register their hypotheses and analysis plans before collecting data.
이에 대응하여 많은 연구자가 이제 데이터를 수집하기 전에 가설과 분석 계획을 등록한다.

Some observers see the crisis as an embarrassment, but it can also be read as evidence that science's self-correcting machinery, though slow, does eventually work.
일부 관찰자들은 이 위기를 망신으로 보지만, 그것은 과학의 자기 수정 장치가 느리긴 해도 결국 작동한다는 증거로 읽을 수도 있다.

해석 · The Mirror Neuron Story

In the 1990s researchers in Italy found neurons in monkeys that fired both when an animal grasped an object and when it watched another do the same.
1990년대 이탈리아의 연구자들은 원숭이가 물체를 잡을 때와 다른 개체가 같은 행동을 하는 것을 볼 때 모두 발화하는 뉴런을 발견했다.

These "mirror neurons" quickly became famous far beyond neuroscience.
이 '거울 뉴런'은 신경과학을 훨씬 넘어 빠르게 유명해졌다.

Popular writers credited them with explaining empathy, language, imitation, and even the origins of civilization.
대중 작가들은 그것이 공감, 언어, 모방, 심지어 문명의 기원까지 설명한다고 여겼다.

The actual evidence was considerably narrower.
실제 증거는 상당히 좁았다.

Direct recordings from individual human neurons are rare, and the brain-imaging studies in humans measure the activity of large regions rather than of specific cells.
개별 인간 뉴런을 직접 기록한 자료는 드물고, 인간 대상 뇌 영상 연구는 특정 세포가 아니라 넓은 영역의 활동을 측정한다.

Moreover, showing that a neuron responds during an action does not show that it causes our understanding of that action.
게다가 어떤 뉴런이 행동 중에 반응한다는 것을 보여 주는 것은 그것이 그 행동에 대한 우리의 이해를 일으킨다는 것을 보여 주지 않는다.

Patients with damage to motor areas can often still recognize actions they can no longer perform.
운동 영역이 손상된 환자들도 자신이 더는 할 수 없는 행동을 흔히 여전히 알아볼 수 있다.

None of this means the discovery was unimportant; it was a genuine finding about how perception and action are linked.
이 중 어느 것도 그 발견이 중요하지 않았다는 뜻은 아니며, 그것은 지각과 행동이 어떻게 연결되는지에 관한 진정한 발견이었다.

The episode illustrates how a striking result can be stretched to answer questions it was never designed to address.
이 일화는 인상적인 결과가 원래 다루도록 설계되지 않은 질문에 답하는 데까지 확대될 수 있음을 보여 준다.

해석 · Too Many Options

A well-known experiment set up a tasting table in a grocery store, offering customers either six varieties of jam or twenty-four.
잘 알려진 한 실험은 식료품점에 시식대를 차려 놓고 손님들에게 잼 6종류 또는 24종류를 제공했다.

The larger display attracted more visitors, but shoppers who saw only six flavors were far more likely to buy a jar.
큰 진열대는 더 많은 방문객을 끌었지만, 6가지 맛만 본 쇼핑객들이 잼 한 병을 살 가능성이 훨씬 높았다.

The result was widely cited as proof that too much choice paralyzes us.
이 결과는 너무 많은 선택이 우리를 마비시킨다는 증거로 널리 인용되었다.

Later researchers, however, combined dozens of similar studies and found that the average effect was close to zero.
그러나 이후 연구자들은 수십 개의 비슷한 연구를 종합하여 평균 효과가 0에 가깝다는 것을 발견했다.

Choice overload appeared in some conditions and vanished in others.
선택 과부하는 어떤 조건에서는 나타나고 다른 조건에서는 사라졌다.

It was most likely when options were hard to compare, when people had no clear preferences, and when they felt pressure to pick the single best item.

그것은 선택지들을 비교하기 어려울 때, 사람들에게 뚜렷한 선호가 없을 때, 그리고 단 하나의 최선을 골라야 한다는 압박을 느낄 때 가장 일어나기 쉬웠다.

Experts who know exactly what they want often welcome a large selection.
자신이 무엇을 원하는지 정확히 아는 전문가들은 흔히 많은 선택지를 반긴다.

The question, then, is not whether choice is good or bad, but under what circumstances more of it becomes a burden.
그렇다면 문제는 선택이 좋은지 나쁜지가 아니라, 어떤 상황에서 선택이 더 많아지는 것이 부담이 되는가이다.

A finding that once seemed universal turned out to depend heavily on context.
한때 보편적으로 보였던 발견이 맥락에 크게 좌우되는 것으로 드러났다.

해석 · Cooling the City

On a summer afternoon, the center of a large city can be several degrees warmer than the surrounding countryside.
여름 오후에 대도시 중심부는 주변 시골보다 몇 도 더 따뜻할 수 있다.

Dark roofs and asphalt absorb sunlight and release it as heat, while buildings trap that heat and block cooling winds.
어두운 지붕과 아스팔트는 햇빛을 흡수해 열로 방출하고, 건물들은 그 열을 가두고 시원한 바람을 막는다.

Vegetation, which cools the air by releasing water through its leaves, is scarce in dense urban cores.
잎을 통해 물을 내보내 공기를 식히는 식물은 밀집한 도심에는 드물다.

This urban heat island is more than a matter of comfort, since heat waves kill more people than any other type of weather disaster in many countries.
이 도시 열섬은 단지 쾌적함의 문제가 아닌데, 많은 나라에서 폭염은 다른 어떤 기상 재해보다 많은 사람을 죽이기 때문이다.

Cities have experimented with painting roofs white, planting trees, and covering rooftops with gardens.
도시들은 지붕을 하얗게 칠하고, 나무를 심고, 옥상을 정원으로 덮는 실험을 해 왔다.

Each approach involves trade-offs.
각 접근법에는 장단점이 있다.

White roofs are cheap but do little for people at street level, where the heat is most dangerous.
흰 지붕은 싸지만 열이 가장 위험한 거리 수준의 사람들에게는 별 도움이 되지 않는다.

Street trees provide shade exactly where pedestrians need it, but they take years to mature and require water.
가로수는 보행자가 필요로 하는 바로 그곳에 그늘을 주지만, 자라는 데 여러 해가 걸리고 물이 필요하다.

The most vulnerable residents, often elderly people in poor neighborhoods with little greenery, gain the most from whichever measures reach their streets first.
가장 취약한 주민들, 흔히 녹지가 거의 없는 가난한 동네의 노인들은 어떤 조치든 자기 거리에 가장 먼저 도달하는 것으로부터 가장 큰 혜택을 얻는다.

해석 · Did the Press Cause the Reformation?

It is often said that the printing press caused the Protestant Reformation.
흔히 인쇄기가 개신교 종교 개혁을 일으켰다고 말한다.

There is truth in the claim: Martin Luther's pamphlets were reproduced in hundreds of thousands of copies, spreading his ideas faster than authorities could suppress them.
그 주장에는 진실이 있다. 마르틴 루터의 소책자는 수십만 부 복제되어 당국이 억누를 수 있는 것보다 빠르게 그의 사상을 퍼뜨렸다.

Earlier reformers, whose writings had to be copied by hand, were far easier to silence.
글을 손으로 베껴야 했던 이전의 개혁가들은 침묵시키기가 훨씬 쉬웠다.

Yet the press had existed for more than sixty years before Luther, and it served the Catholic Church just as readily, printing indulgences and official doctrine.
그러나 인쇄기는 루터 이전에 60년 넘게 존재했고, 면벌부와 공식 교리를 인쇄하며 가톨릭교회에도 똑같이 기꺼이 봉사했다.

Many regions with thriving print shops remained Catholic.
인쇄소가 번성한 많은 지역이 가톨릭으로 남았다.

What the press did was to lower the cost of spreading ideas, which favored whoever had ideas that many people were ready to hear.
인쇄기가 한 일은 사상을 퍼뜨리는 비용을 낮추는 것이었고, 이는 많은 사람이 들을 준비가 된 사상을 가진 누구에게든 유리했다.

Luther found a public already angered by church corruption and eager for religious texts in their own languages.
루터는 이미 교회 부패에 분노하고 자기 언어로 된 종교 문헌을 갈망하는 대중을 만났다.

Technology, in this view, is better understood as an amplifier than as a cause: it magnifies forces that already exist rather than creating them from nothing.
이 관점에서 기술은 원인이라기보다 증폭기로 이해하는 것이 더 낫다. 기술은 무에서 힘을 만들어 내기보다 이미 존재하는 힘을 확대한다.

해석 · Whose Body Is It?

The human body contains roughly as many bacterial cells as human ones, most of them living in the gut.
인간의 몸에는 인간 세포와 대략 같은 수의 세균 세포가 있으며, 그 대부분은 장에 산다.

These microbes help digest fiber, produce certain vitamins, and train the immune system to tell friend from foe.
이 미생물들은 섬유질 소화를 돕고, 특정 비타민을 만들며, 면역 체계가 아군과 적을 구별하도록 훈련시킨다.

Studies in mice have linked changes in gut bacteria to obesity, anxiety-like behavior, and responses to medication.
쥐 연구들은 장내 세균의 변화를 비만, 불안 유사 행동, 약물 반응과 연관 지어 왔다.

Such findings have inspired a wave of products promising to improve health by rebalancing the microbiome.
이러한 발견은 미생물군을 재조정해 건강을 개선해 준다고 약속하는 제품들의 물결을 불러일으켰다.

Scientists themselves tend to be more cautious.
과학자들 자신은 더 신중한 경향이 있다.

Mice raised in sterile conditions differ greatly from people, and many human studies show only that certain bacteria appear alongside a disease, not that they produce it.
무균 환경에서 자란 쥐는 사람과 크게 다르며, 많은 인간 연구는 특정 세균이 질병과 함께 나타난다는 것만 보여 줄 뿐 그것이 질병을 일으킨다는 것을 보여 주지 않는다.

The illness might change the bacteria rather than the other way around.
세균이 질병을 바꾸는 것이 아니라 질병이 세균을 바꾸는 것일 수도 있다.

Moreover, each person's microbial community is unique and fairly stable, so a probiotic capsule may pass through without establishing itself.
게다가 각 사람의 미생물 공동체는 고유하고 상당히 안정적이어서, 프로바이오틱 캡슐이 자리 잡지 못하고 그냥 통과할 수도 있다.

The microbiome is a real frontier, but the distance between a promising association and a reliable treatment remains large.
미생물군은 진정한 미개척 분야이지만, 유망한 연관성과 믿을 만한 치료 사이의 거리는 여전히 멀다.

해석 · Sleeping on It

For a long time sleep was regarded as a passive state in which the brain simply rested.
오랫동안 잠은 뇌가 그저 쉬는 수동적 상태로 여겨졌다.

Research now suggests that sleep plays an active role in turning fragile new memories into lasting ones.
이제 연구는 잠이 연약한 새 기억을 오래가는 기억으로 바꾸는 데 능동적인 역할을 한다는 것을 시사한다.

In rats that have learned a maze, the same sequences of neurons that fired during learning fire again during sleep, as if the day's route were being replayed.
미로를 학습한 쥐에서는 학습 중 발화했던 것과 같은 순서의 뉴런들이 잠자는 동안 다시 발화하는데, 마치 그날의 경로가 재생되는 것 같다.

When this replay is disrupted, the rats perform worse the following day.
이 재생이 방해받으면 쥐들은 다음 날 더 못한다.

In humans, people who sleep after studying a list of word pairs remember more of them than those who stay awake for the same length of time.
사람의 경우, 단어 쌍 목록을 공부한 뒤 잠을 잔 사람들은 같은 시간 동안 깨어 있던 사람들보다 그것들을 더 많이 기억한다.

Sleep does not preserve everything equally, however.
그러나 잠이 모든 것을 똑같이 보존하지는 않는다.

It appears to favor information that the learner expects to need later and to extract general patterns while letting irrelevant details fade.
잠은 학습자가 나중에 필요하리라 예상하는 정보를 우선하고, 관련 없는 세부 사항은 희미해지게 두면서 일반적 패턴을 추출하는 것으로 보인다.

This selectivity may explain why people sometimes wake with a solution to a problem that puzzled them the night before.
이 선택성은 사람들이 때때로 전날 밤 그들을 곤혹스럽게 한 문제의 해답을 가지고 깨어나는 이유를 설명할 수 있다.

For students, the implication is uncomfortable: an all-night study session may sacrifice the very process that makes studying stick.
학생들에게 그 함의는 불편하다. 밤샘 공부는 공부를 기억에 남게 하는 바로 그 과정을 희생시킬 수 있다.

해석 · The Hidden Majority

People sometimes express opinions in public that differ from those they hold in private.
사람들은 때때로 사적으로 지닌 것과 다른 의견을 공개적으로 표현한다.

The economist Timur Kuran called this preference falsification and argued that it can make societies look far more stable than they are.
경제학자 티무르 쿠란은 이를 선호 위장이라 부르며 그것이 사회를 실제보다 훨씬 안정적으로 보이게 만들 수 있다고 주장했다.

If everyone who dislikes a regime keeps quiet out of fear, each person concludes that he or she is nearly alone in disliking it.
정권을 싫어하는 모든 사람이 두려움 때문에 침묵하면, 각자는 자기만 거의 홀로 그것을 싫어한다고 결론짓는다.

Individuals differ, however, in how much support they need to see before they are willing to speak.
그러나 개인들은 말할 의향을 갖기 전에 얼마나 많은 지지를 보아야 하는지에서 서로 다르다.

A few will protest even alone; others will join only when ten percent have; still others only at fifty percent.
몇몇은 혼자서라도 항의할 것이고, 다른 이들은 10퍼센트가 나섰을 때만, 또 다른 이들은 50퍼센트일 때만 합류할 것이다.

When a small event pushes a handful of people into the open, those with slightly higher thresholds may follow, triggering others in turn.
작은 사건이 몇몇 사람을 공개적으로 밀어내면, 문턱이 약간 더 높은 사람들이 뒤따를 수 있고, 그것이 차례로 다른 사람들을 촉발한다.

Opposition that seemed absent can then appear almost overnight.
그러면 없는 듯 보였던 반대가 거의 하룻밤 사이에 나타날 수 있다.

This helps explain why experts and even the participants themselves so often fail to predict revolutions.
이는 왜 전문가들, 심지어 참가자들 자신조차 그토록 자주 혁명을 예측하지 못하는지 설명하는 데 도움이 된다.

The information needed for prediction is precisely what people are hiding.
예측에 필요한 정보는 바로 사람들이 숨기고 있는 것이다.

해석 · Repairing Harm

Conventional criminal justice asks three questions: what law was broken, who broke it, and what punishment is deserved.
전통적 형사 사법은 세 가지 질문을 한다. 어떤 법이 어겨졌는지, 누가 어겼는지, 어떤 처벌이 마땅한지.

Restorative justice asks different ones: who was harmed, what do they need, and whose obligation is it to meet those needs.
회복적 정의는 다른 질문을 한다. 누가 피해를 입었는지, 그들에게 무엇이 필요한지, 그 필요를 채울 의무가 누구에게 있는지.

In practice, this often means a facilitated meeting where offenders hear directly from the people they harmed and agree on ways to make amends.
실제로 이는 흔히 진행자가 있는 만남을 뜻하는데, 거기서 가해자는 자신이 해를 끼친 사람들로부터 직접 이야기를 듣고 보상할 방법에 합의한다.

Supporters point to studies in which victims who took part reported less fear and anger than those whose cases went through the courts alone.
지지자들은 참여한 피해자들이 사건이 법원만 거친 피해자들보다 두려움과 분노를 덜 보고한 연구들을 지적한다.

Some programs have also been associated with lower rates of reoffending.
일부 프로그램은 낮은 재범률과도 연관되어 왔다.

Critics raise reasonable concerns.
비판자들은 타당한 우려를 제기한다.

Victims may feel pressured to forgive, and offenders who participate voluntarily may already be those least likely to reoffend, which would make the programs look more effective than they are.
피해자는 용서하라는 압박을 느낄 수 있고, 자발적으로 참여하는 가해자는 애초에 재범 가능성이 가장 낮은 사람들일 수 있는데, 그렇다면 프로그램이 실제보다 더 효과적으로 보일 것이다.

Most advocates therefore present restorative practices as a complement to the courts rather than a replacement for them.
따라서 대부분의 옹호자는 회복적 실천을 법원의 대체물이 아니라 보완물로 제시한다.

해석 · Lost and Found in Translation

Lists of "untranslatable" words circulate widely: a German word for pleasure at another's misfortune, a Portuguese word for longing for something absent.
'번역 불가능한' 단어 목록이 널리 퍼져 있다. 남의 불행에 대한 기쁨을 뜻하는 독일어 단어, 없는 무언가에 대한 그리움을 뜻하는 포르투갈어 단어 같은 것들이다.

Such lists suggest that each language contains feelings its neighbors cannot express.
이러한 목록은 각 언어가 이웃 언어들이 표현할 수 없는 감정을 담고 있다고 암시한다.

Yet every entry on these lists is followed by an English explanation that most readers understand perfectly well.
그러나 이 목록의 모든 항목 뒤에는 대부분의 독자가 완벽히 잘 이해하는 영어 설명이 붙어 있다.

What is missing is not the meaning but a single convenient word for it.
빠진 것은 의미가 아니라 그것을 위한 하나의 편리한 단어다.

The more serious difficulty of translation lies elsewhere, in features that cannot be paraphrased without being destroyed.
번역의 더 심각한 어려움은 다른 곳, 즉 바꿔 말하면 파괴되지 않을 수 없는 특징들에 있다.

A pun depends on the accident that two meanings share one sound; a poem's rhythm depends on the stresses of particular syllables.
말장난은 두 의미가 한 소리를 공유한다는 우연에 의존하고, 시의 리듬은 특정 음절의 강세에 의존한다.

A translator can explain a joke, but an explained joke is no longer funny.
번역가는 농담을 설명할 수 있지만, 설명된 농담은 더 이상 웃기지 않다.

Translation, then, rarely fails at conveying information; it struggles with effects that live in the form of the words themselves.
그렇다면 번역은 정보를 전달하는 데 실패하는 경우가 드물고, 단어 자체의 형식 속에 사는 효과에서 어려움을 겪는다.

해석 · Evolution in the Hospital

Antibiotic resistance is often described as bacteria "learning" to defeat our drugs, but no learning is involved.
항생제 내성은 흔히 세균이 우리 약을 이기는 법을 '배운다'고 묘사되지만, 배움은 전혀 관련이 없다.

In any large population of bacteria, a few cells carry random mutations that happen to make them less vulnerable to a particular drug.
큰 세균 집단 어디에서나 소수의 세포가 우연히 특정 약에 덜 취약하게 만드는 무작위 돌연변이를 지니고 있다.

When the drug is applied, it kills the susceptible majority and leaves the resistant few to multiply without competition.
약이 투여되면 그것은 취약한 다수를 죽이고 내성을 가진 소수를 경쟁 없이 번식하도록 남긴다.

The drug does not create resistance; it selects for it.
약은 내성을 만들어 내는 것이 아니라 그것을 선택한다.

This is why stopping a course of antibiotics early can be risky, since it may remove the weakest bacteria while sparing those that are partially resistant.
그래서 항생제 복용을 일찍 중단하는 것이 위험할 수 있는데, 가장 약한 세균은 제거하면서 부분적으로 내성 있는 세균은 살려 둘 수 있기 때문이다.

It is also why using antibiotics in livestock to speed growth worries public-health experts: every unnecessary use is an opportunity for selection.
그래서 성장을 촉진하려고 가축에 항생제를 쓰는 것이 공중 보건 전문가들을 걱정시키기도 한다. 모든 불필요한 사용은 선택의 기회다.

Resistance genes can even pass between different species of bacteria, so resistance that arises on a farm need not stay there.
내성 유전자는 심지어 서로 다른 종의 세균 사이를 이동할 수 있으므로, 농장에서 생긴 내성이 거기에 머물 필요가 없다.

Understanding resistance as natural selection rather than learning clarifies the policy problem: the goal is not to outsmart bacteria but to reduce the pressure we place on them.
내성을 배움이 아니라 자연 선택으로 이해하면 정책 문제가 명확해진다. 목표는 세균보다 한 수 앞서는 것이 아니라 우리가 세균에 가하는 압력을 줄이는 것이다.

해석 · Fitting the Noise

Suppose you want to predict tomorrow's temperature from past data.
과거 데이터로 내일 기온을 예측하고 싶다고 하자.

A simple model might use only the season and yesterday's temperature.
단순한 모델은 계절과 어제의 기온만 쓸 수 있다.

A complex model might add hundreds of variables, from moon phases to the number of cars on the road, and adjust itself until it matches the historical record almost perfectly.
복잡한 모델은 달의 위상부터 도로 위 차량 수까지 수백 개의 변수를 추가하고, 과거 기록과 거의 완벽히 일치할 때까지 스스로를 조정할 수 있다.

Surprisingly, the complex model often predicts the future worse.
놀랍게도 복잡한 모델은 흔히 미래를 더 못 예측한다.

Past data contain two things: real patterns that will recur and random fluctuations that will not.
과거 데이터에는 두 가지가 들어 있다. 반복될 진짜 패턴과 반복되지 않을 무작위 변동이다.

A model flexible enough to fit every bump in the record has learned the accidents along with the regularities, a problem called overfitting.
기록의 모든 굴곡에 맞출 만큼 유연한 모델은 규칙성과 함께 우연까지 학습한 것이며, 이 문제를 과적합이라고 한다.

The standard defense is to test a model on data it has never seen.
표준적인 방어책은 모델이 본 적 없는 데이터로 모델을 검증하는 것이다.

If its accuracy collapses outside the training set, it has memorized rather than understood.
학습용 데이터 밖에서 정확도가 무너지면, 그 모델은 이해한 것이 아니라 암기한 것이다.

The same trap awaits human experts who construct elaborate explanations for every past event, mistaking a perfect account of history for an ability to foresee what comes next.
같은 함정이 모든 과거 사건에 정교한 설명을 만들어 내는 인간 전문가들을 기다리는데, 그들은 역사를 완벽히 설명하는 것을 다음에 올 일을 내다보는 능력으로 착각한다.

해석 · Who Owns the Past?

Many of the world's great museums hold objects that were taken from their places of origin during periods of colonial rule.
세계의 많은 대형 박물관은 식민 통치 시기에 원산지에서 반출된 물건들을 소장하고 있다.

Communities and governments in those places increasingly ask for them back.
그 지역의 공동체와 정부들은 점점 더 그것들의 반환을 요구한다.

Museums have traditionally replied that they hold these objects in trust for all humanity, display them alongside works from other cultures, and protect them with expertise that may be lacking elsewhere.
박물관들은 전통적으로 이 물건들을 온 인류를 위해 맡아 보관하고, 다른 문화의 작품들과 함께 전시하며, 다른 곳에는 부족할 수도 있는 전문성으로 보호한다고 답해 왔다.

Each of these arguments has weakened.
이 논거들은 각각 약해졌다.

The claim to universal stewardship sits awkwardly with the fact that most of humanity cannot afford to visit the cities where these museums stand.
보편적 관리자라는 주장은 인류 대부분이 이 박물관들이 있는 도시를 방문할 여유가 없다는 사실과 어색하게 맞물린다.

And many countries requesting return now have modern museums fully capable of conservation.
그리고 반환을 요청하는 많은 나라들은 이제 보존을 충분히 해낼 수 있는 현대적 박물관을 갖추고 있다.

Defenders of the status quo also warn that returning one object will open the floodgates and empty their galleries.
현상 유지를 옹호하는 사람들은 또한 물건 하나를 돌려주면 봇물이 터져 전시실이 텅 빌 것이라고 경고한다.

Yet this fear treats every acquisition as equivalent, ignoring the difference between an object bought from a willing seller and one seized after a military raid.
그러나 이 두려움은 모든 취득을 동등하게 취급하며, 자발적인 판매자에게서 산 물건과 군사 습격 후 빼앗은 물건의 차이를 무시한다.

A more defensible approach examines the history of each object, so that the question becomes not whether museums should return things, but which things and why.
더 옹호할 만한 접근은 각 물건의 내력을 살피는 것이어서, 문제는 박물관이 물건을 돌려줘야 하는지가 아니라 어떤 물건을 왜 돌려줘야 하는지가 된다.

해석 · The Limits of a Famous Number

In the 1990s the anthropologist Robin Dunbar noticed that primates with larger neocortices tended to live in larger social groups.
1990년대 인류학자 로빈 던바는 신피질이 더 큰 영장류가 더 큰 사회 집단에서 사는 경향이 있음을 알아챘다.

Extending the pattern to humans, he estimated that people can maintain stable relationships with about 150 others.
이 패턴을 인간에게 확장하여 그는 사람이 약 150명과 안정적인 관계를 유지할 수 있다고 추정했다.

The figure became remarkably popular, shaping the design of companies, military units, and online communities.
그 수치는 놀랄 만큼 인기를 얻어 기업, 군대 부대, 온라인 커뮤니티의 설계에 영향을 주었다.

A recent reanalysis using more data and modern statistical methods reached a sobering conclusion.
더 많은 데이터와 현대적 통계 방법을 사용한 최근의 재분석은 정신이 번쩍 드는 결론에 도달했다.

Depending on reasonable choices about which species and measurements to include, the predicted human group size ranged from fewer than ten to more than five hundred.
어떤 종과 측정치를 포함할지에 관한 합리적인 선택에 따라 예측된 인간 집단 크기는 열 명 미만부터 오백 명 이상까지 다양했다.

An estimate with such a wide margin, the authors argued, cannot support a specific number at all.
저자들은 그렇게 넓은 오차 범위를 가진 추정치는 특정한 수치를 전혀 뒷받침할 수 없다고 주장했다.

Dunbar has defended his figure by pointing to surveys of personal networks that cluster around 150.
던바는 150 근처에 몰리는 개인 연결망 조사들을 근거로 자신의 수치를 옹호해 왔다.

Critics reply that what counts as a "stable relationship" is defined loosely enough to yield almost any number.
비판자들은 무엇이 '안정적 관계'로 간주되는지가 거의 어떤 수치든 나올 만큼 느슨하게 정의된다고 반박한다.

The dispute shows how a precise-sounding figure can outlive the uncertainty of the evidence that produced it.
이 논쟁은 정확하게 들리는 수치가 그것을 낳은 증거의 불확실성보다 어떻게 더 오래 살아남을 수 있는지 보여 준다.

해석 · Why We Overvalue What We Own

In a classic experiment, half the students in a class were given coffee mugs and the other half were not.
고전적인 실험에서 한 학급 학생의 절반은 머그잔을 받았고 나머지 절반은 받지 못했다.

Owners were then asked how much they would accept to sell their mugs, and the others how much they would pay to buy one.
그런 다음 소유자들에게는 머그잔을 팔기 위해 얼마를 받겠는지, 다른 학생들에게는 하나를 사기 위해 얼마를 내겠는지 물었다.

Since the mugs had been distributed at random, standard economic theory predicted that about half of them would change hands.
머그잔이 무작위로 나눠졌으므로 표준 경제 이론은 그중 약 절반이 주인을 바꿀 것이라고 예측했다.

In fact, very few trades occurred, because owners demanded roughly twice what buyers were willing to pay.
실제로는 거래가 거의 일어나지 않았는데, 소유자들이 구매자들이 낼 의향이 있는 금액의 대략 두 배를 요구했기 때문이다.

This gap, known as the endowment effect, is usually explained by loss aversion: giving up something we have feels worse than failing to gain the same thing.
소유 효과로 알려진 이 격차는 보통 손실 회피로 설명되는데, 가진 것을 포기하는 것이 같은 것을 얻지 못하는 것보다 더 나쁘게 느껴진다는 것이다.

Later work found that the effect shrinks among experienced traders, who come to regard goods as things to be exchanged rather than kept.
이후 연구는 상품을 보관할 것이 아니라 교환할 것으로 여기게 된 숙련된 거래자들 사이에서는 그 효과가 줄어든다는 것을 발견했다.

It also weakens when the object is a token valued only for its price, such as cash.
또한 그것은 물건이 현금처럼 가격으로만 가치가 매겨지는 토큰일 때 약해진다.

The endowment effect, then, may depend less on ownership as such than on how people frame what they hold.
그렇다면 소유 효과는 소유 그 자체보다 사람들이 자신이 가진 것을 어떻게 인식하는지에 더 좌우되는 것일지 모른다.

해석 · Standing on Shoulders

No single person, however brilliant, could invent a smartphone from scratch.
아무리 뛰어난 사람이라도 혼자서 스마트폰을 처음부터 발명할 수는 없다.

It depends on mathematics, metallurgy, chemistry, and electronics accumulated over thousands of years by countless people, most of them forgotten.
그것은 수천 년에 걸쳐 수많은 사람들이 축적한 수학, 금속학, 화학, 전자 공학에 의존하며, 그들 대부분은 잊혔다.

Humans are distinctive less for individual intelligence than for cumulative culture: the ability to pass on improvements so that each generation begins where the last one finished.
인간은 개인의 지능보다 누적 문화, 즉 각 세대가 앞 세대가 끝낸 곳에서 시작하도록 개선을 전달하는 능력 때문에 독특하다.

Chimpanzees use tools and even show local traditions, but their techniques rarely build on one another over generations.
침팬지도 도구를 사용하고 심지어 지역적 전통을 보이지만, 그들의 기술은 세대를 거쳐 서로 위에 쌓이는 경우가 드물다.

One explanation emphasizes faithful copying.
한 가지 설명은 충실한 모방을 강조한다.

Human children imitate adults precisely, even reproducing steps that serve no obvious purpose, while young chimpanzees skip such steps and go straight to the goal.
인간 아이들은 어른을 정확히 모방하며 뚜렷한 목적이 없는 단계까지 재현하는 반면, 어린 침팬지는 그런 단계를 건너뛰고 곧장 목표로 간다.

The chimpanzees' strategy looks smarter in the moment, but precise copying preserves details whose value may not be apparent to the learner.
침팬지의 전략은 그 순간에는 더 영리해 보이지만, 정확한 모방은 학습자에게 가치가 분명하지 않을 수 있는 세부 사항을 보존한다.

Over many generations, those preserved details add up.
여러 세대에 걸쳐 그렇게 보존된 세부 사항들이 쌓인다.

The same research also suggests a vulnerability: a population that shrinks or becomes isolated can lose skills it no longer has enough teachers to maintain.
같은 연구는 취약성도 시사한다. 줄어들거나 고립된 집단은 유지할 만큼 충분한 가르치는 사람이 더 이상 없는 기술을 잃을 수 있다.

해석 · Reading Deep Time

In the eighteenth century, most Europeans believed the Earth was only a few thousand years old.
18세기에 대부분의 유럽인은 지구가 겨우 수천 년밖에 안 되었다고 믿었다.

The Scottish geologist James Hutton, studying rock formations along the coast, reached a very different conclusion.
해안을 따라 암석층을 연구한 스코틀랜드의 지질학자 제임스 허턴은 매우 다른 결론에 도달했다.

At one site he found nearly vertical layers of rock topped by horizontal ones.
한 장소에서 그는 거의 수직인 암석층 위에 수평인 암석층이 덮여 있는 것을 발견했다.

He reasoned that the lower layers had first been laid down horizontally as sediment, then hardened, tilted, and worn away before new sediment settled on top.
그는 아래쪽 층이 먼저 퇴적물로 수평하게 쌓인 뒤 굳고, 기울어지고, 깎여 나간 다음 그 위에 새 퇴적물이 쌓였다고 추론했다.

Watching how slowly sediment accumulates in the present, he concluded that such a sequence must have required an almost unimaginable span of time.
현재 퇴적물이 얼마나 느리게 쌓이는지 관찰한 그는 그러한 연속 과정에는 거의 상상할 수 없는 시간이 필요했을 것이라고 결론지었다.

His key assumption was that the processes shaping the Earth today are the same ones that shaped it in the past.
그의 핵심 가정은 오늘날 지구를 형성하는 과정이 과거에 지구를 형성한 것과 같은 과정이라는 것이었다.

Applied to the rocks before him, this simple principle turned a coastline into a record of ages.
눈앞의 암석에 적용되자, 이 단순한 원리는 해안선을 수많은 시대의 기록으로 바꾸어 놓았다.

Later geologists would recognize that sudden catastrophes such as asteroid impacts also play a role, so Hutton's principle needed refinement.
후대의 지질학자들은 소행성 충돌 같은 갑작스러운 대재앙도 한몫한다는 것을 인정하게 되므로, 허턴의 원리는 다듬을 필요가 있었다.

Yet his central insight survived: the present, carefully observed, is a key to an otherwise invisible past.
그러나 그의 핵심 통찰은 살아남았다. 주의 깊게 관찰된 현재는, 그렇지 않으면 보이지 않을 과거를 여는 열쇠다.

해석 · When Painting Lost Its Job

When photography appeared in the 1830s, some painters declared that their art was finished.
1830년대에 사진이 등장했을 때 일부 화가들은 자신들의 예술이 끝났다고 선언했다.

For centuries, one of painting's main functions had been to record how people and places looked.
수 세기 동안 회화의 주된 기능 중 하나는 사람과 장소가 어떻게 생겼는지 기록하는 것이었다.

A camera could now do this faster, more cheaply, and with a precision no hand could match.
이제 카메라가 이 일을 더 빠르고, 더 싸고, 어떤 손도 따라올 수 없는 정밀함으로 할 수 있었다.

Portrait miniaturists, whose living depended on such work, did largely disappear.
그런 일에 생계가 달려 있던 초상 세밀화가들은 실제로 대부분 사라졌다.

But painting as a whole did not die; it changed direction.
그러나 회화 전체는 죽지 않았고 방향을 바꾸었다.

Freed from the duty of exact representation, artists explored what a camera could not capture: the fleeting effects of light as the eye experiences them, the emotional distortion of color, the structure of forms seen from several angles at once.
정확한 재현의 의무에서 풀려난 예술가들은 카메라가 포착할 수 없는 것을 탐구했다. 눈이 경험하는 빛의 순간적 효과, 색의 감정적 왜곡, 여러 각도에서 동시에 본 형태의 구조 같은 것들이었다.

Some historians argue that modern art owes much of its character to this pressure.
일부 역사가들은 현대 미술이 그 성격의 많은 부분을 이 압력에 빚지고 있다고 주장한다.

Others caution that artists were already experimenting for reasons of their own, and that photography accelerated rather than caused the change.
다른 이들은 예술가들이 이미 자신들의 이유로 실험하고 있었으며, 사진은 변화를 일으킨 것이 아니라 가속했다고 주의를 준다.

Either way, the episode suggests that a new technology may transform an old practice rather than simply replace it.
어느 쪽이든 이 일화는 새로운 기술이 오래된 관행을 단순히 대체하기보다 변형시킬 수 있음을 시사한다.

해석 · Rule of Law, Rule by Law

A country can have many laws and still lack the rule of law.
한 나라는 많은 법을 가지고 있으면서도 법의 지배가 없을 수 있다.

The distinction is between rule by law, in which those in power use legislation as a tool to govern others, and rule of law, in which the powerful are themselves bound by legal limits.
그 구분은 권력자가 입법을 타인을 통치하는 도구로 사용하는 '법에 의한 지배'와, 권력자 자신도 법적 한계에 묶이는 '법의 지배' 사이에 있다.

Under rule by law, statutes may be detailed and courts may be busy, but a ruler can change the law whenever it becomes inconvenient or simply ignore it when it applies to allies.
법에 의한 지배 아래에서는 법령이 상세하고 법원이 바쁠 수 있지만, 통치자는 법이 불편해질 때마다 바꾸거나 동맹에게 적용될 때는 그냥 무시할 수 있다.

Scholars often list several conditions for the rule of law: laws must be public, prospective rather than retroactive, reasonably stable, and applied by independent courts to officials and citizens alike.
학자들은 흔히 법의 지배를 위한 몇 가지 조건을 나열한다. 법은 공개되어야 하고, 소급이 아니라 장래를 향해야 하며, 합리적으로 안정적이어야 하고, 독립된 법원에 의해 공직자와 시민에게 똑같이 적용되어야 한다.

None of these conditions guarantees that the laws are just.
이 조건들 중 어느 것도 법이 정의롭다는 것을 보장하지 않는다.

A stable, public, impartially applied law could still be cruel.
안정적이고 공개되며 공평하게 적용되는 법도 여전히 잔인할 수 있다.

Defenders of the concept accept this but argue that the rule of law has value of its own: it allows people to plan their lives and limits the arbitrary use of power.
이 개념의 옹호자들은 이를 인정하지만 법의 지배에는 고유한 가치가 있다고 주장한다. 그것은 사람들이 자기 삶을 계획할 수 있게 하고 권력의 자의적 사용을 제한한다.

In this view it is a necessary but not sufficient condition for a just society.
이 관점에서 그것은 정의로운 사회를 위한 필요조건이지만 충분조건은 아니다.

해석 · Rethinking the Bystander

The idea that people in groups fail to help strangers became famous after a 1964 murder in New York, in which thirty-eight witnesses were reported to have done nothing.
집단 속 사람들이 낯선 사람을 돕지 못한다는 생각은 1964년 뉴욕의 한 살인 사건 이후 유명해졌는데, 그 사건에서 38명의 목격자가 아무것도 하지 않았다고 보도되었다.

Later investigations found that the newspaper account was badly exaggerated: fewer people saw the attack, and some did call for help.
이후 조사에서 그 신문 기사가 심하게 과장되었음이 밝혀졌다. 공격을 본 사람은 더 적었고, 일부는 실제로 도움을 요청했다.

Still, laboratory studies did find a bystander effect, showing that a single individual is more likely to help than any particular member of a group.
그럼에도 실험실 연구들은 방관자 효과를 실제로 발견했는데, 한 개인이 집단의 특정 구성원보다 도울 가능성이 더 높다는 것을 보여 주었다.

A recent study took a different approach, analyzing hundreds of real public conflicts recorded by security cameras in several countries.
최근 한 연구는 다른 접근을 택해 여러 나라에서 보안 카메라에 녹화된 수백 건의 실제 공공 갈등을 분석했다.

In about nine out of ten cases, at least one bystander intervened, and the likelihood that someone helped rose with the number of people present.
약 10건 중 9건에서 적어도 한 명의 방관자가 개입했으며, 누군가 도울 가능성은 현장에 있는 사람 수와 함께 증가했다.

These findings need not contradict the laboratory work.
이 발견들이 실험실 연구와 모순될 필요는 없다.

Even if each individual in a crowd is somewhat less likely to act, the chance that at least one of many people acts can still be high.
군중 속 각 개인이 행동할 가능성이 다소 낮더라도, 많은 사람 중 적어도 한 명이 행동할 확률은 여전히 높을 수 있다.

For a victim, it is this second probability that matters.
피해자에게 중요한 것은 바로 이 두 번째 확률이다.

해석 · Paying to Pollute

Carbon offsets promise a simple bargain: an airline or a company that emits greenhouse gases can pay someone else to reduce emissions by an equal amount, often by protecting a forest.
탄소 상쇄는 단순한 거래를 약속한다. 온실가스를 배출하는 항공사나 기업이 다른 누군가에게 돈을 내 같은 양의 배출을 줄이게 할 수 있으며, 흔히 숲을 보호하는 방식이다.

The difficulty lies in proving that the reduction really happened because of the payment.
어려움은 그 감축이 정말로 그 지불 때문에 일어났음을 증명하는 데 있다.

If a forest was never in danger of being cut, paying to protect it changes nothing, yet the buyer still claims credit.
숲이 애초에 벌목될 위험이 전혀 없었다면 그것을 보호하기 위해 돈을 내는 것은 아무것도 바꾸지 않지만, 구매자는 여전히 공로를 주장한다.

Determining what would have happened without the project requires predicting an alternative world that can never be observed.
사업이 없었다면 무슨 일이 일어났을지 결정하려면 결코 관찰될 수 없는 대안적 세계를 예측해야 한다.

Project developers have an incentive to imagine that world as gloomily as possible, since a more threatened forest generates more credits to sell.
사업 개발자들에게는 그 세계를 가능한 한 암울하게 상상할 유인이 있는데, 더 위협받는 숲일수록 팔 수 있는 크레디트를 더 많이 만들어 내기 때문이다.

Several investigations have concluded that many credits were based on exaggerated threats.
여러 조사가 많은 크레디트가 과장된 위협에 근거했다고 결론 내렸다.

There is also the question of permanence: carbon stored in a forest can return to the atmosphere if the forest later burns.
영속성의 문제도 있다. 숲에 저장된 탄소는 그 숲이 나중에 불타면 대기로 돌아갈 수 있다.

None of this means that protecting forests is worthless.
이 중 어느 것도 숲 보호가 가치 없다는 뜻은 아니다.

It means that offsets should be treated as a supplement to reducing one's own emissions, not as a permission slip to continue them.
그것은 상쇄를 자신의 배출을 줄이는 것의 보충으로 다뤄야지, 배출을 계속해도 된다는 허가증으로 다뤄서는 안 된다는 뜻이다.

해석 · Welcome to the New Wild

Conservation has traditionally aimed to restore ecosystems to some earlier, supposedly natural state, often defined as the condition before industrial development or European colonization.
보전은 전통적으로 생태계를 어떤 이전의, 자연적이라고 여겨지는 상태로 복원하는 것을 목표로 해 왔는데, 그 상태는 흔히 산업 개발이나 유럽 식민화 이전의 조건으로 정의된다.

Some ecologists now question whether this goal is always achievable or even desirable.
일부 생태학자들은 이제 이 목표가 항상 달성 가능한지, 심지어 바람직한지 의문을 제기한다.

Climate change, they point out, is shifting the conditions under which species evolved, so a restored ecosystem may no longer suit its own location.
그들은 기후 변화가 종들이 진화한 조건을 바꾸고 있으므로 복원된 생태계가 더 이상 자기 위치에 맞지 않을 수 있다고 지적한다.

Meanwhile, many places now host "novel ecosystems," mixtures of native and introduced species that have arisen without deliberate design.
한편 많은 곳에 이제 '신생태계', 즉 의도적 설계 없이 생겨난 토착종과 도입종의 혼합체가 자리 잡고 있다.

Some of these provide valuable services, such as stabilizing soil or supporting pollinators, and removing the newcomers can be costly and sometimes harmful.
이들 중 일부는 토양 안정화나 꽃가루 매개자 지원 같은 귀중한 기능을 제공하며, 새로 들어온 종을 제거하는 것은 비용이 많이 들고 때로는 해로울 수 있다.

Critics fear that accepting novel ecosystems will give developers and governments an excuse to stop protecting intact habitats.
비판자들은 신생태계를 받아들이면 개발업자와 정부가 온전한 서식지 보호를 그만둘 핑계를 갖게 될 것이라고 우려한다.

If any mixture of species is acceptable, why bother preserving the original?
어떤 종의 혼합이든 받아들일 만하다면 굳이 원래의 것을 보존할 이유가 무엇인가?

Proponents reply that recognizing novel ecosystems is not the same as welcoming destruction; it is an attempt to manage the world as it is rather than as it once was.
지지자들은 신생태계를 인정하는 것이 파괴를 환영하는 것과 같지 않으며, 그것은 세계를 한때의 모습이 아니라 현재의 모습대로 관리하려는 시도라고 답한다.

해석 · The Bilingual Advantage Debate

For years, studies suggested that bilingual people outperform monolinguals on tasks requiring self-control, such as ignoring irrelevant information.
수년간 연구들은 이중 언어 사용자가 무관한 정보 무시하기처럼 자기 통제가 필요한 과제에서 단일 언어 사용자보다 뛰어나다고 시사했다.

The explanation seemed intuitive: constantly suppressing one language while using the other might train a general mental control system.
그 설명은 직관적으로 보였다. 한 언어를 쓰는 동안 다른 언어를 끊임없이 억제하는 것이 일반적인 정신 통제 체계를 훈련시킬 수 있다는 것이다.

More recent and larger studies, however, have frequently failed to find the advantage.
그러나 더 최근의, 더 큰 규모의 연구들은 그 이점을 발견하지 못하는 경우가 많았다.

Researchers have noticed that early positive results tended to come from small samples, and that studies finding no difference were less likely to be published.
연구자들은 초기의 긍정적 결과가 작은 표본에서 나오는 경향이 있었고, 차이를 발견하지 못한 연구는 출판될 가능성이 낮았다는 것을 알아챘다.

Comparisons between groups also raise problems.
집단 간 비교도 문제를 일으킨다.

In many countries bilingual and monolingual children differ in immigration history, family income, and schooling, any of which might affect test performance.
많은 나라에서 이중 언어 아동과 단일 언어 아동은 이민 이력, 가계 소득, 학교 교육이 다르며, 그중 어느 것이든 시험 수행에 영향을 줄 수 있다.

Some scholars conclude that the advantage is a myth; others think it exists only under specific conditions, such as frequent switching between languages.
일부 학자들은 그 이점이 근거 없는 믿음이라고 결론짓고, 다른 학자들은 그것이 언어 간 빈번한 전환 같은 특정 조건에서만 존재한다고 생각한다.

What both sides agree on is that the case for learning a second language never depended on this effect.
양측이 동의하는 것은 제2 언어를 배워야 한다는 주장이 결코 이 효과에 의존한 적이 없다는 점이다.

Being able to communicate with more people is a sufficient reason on its own.
더 많은 사람과 소통할 수 있다는 것만으로도 충분한 이유다.

해석 · Being Sincere, Being Authentic

The literary critic Lionel Trilling distinguished two ideals that are easily confused: sincerity and authenticity.
문학 비평가 라이어널 트릴링은 쉽게 혼동되는 두 이상, 즉 진실성과 진정성을 구분했다.

Sincerity means that what one says matches what one feels; it is a virtue exercised toward others, a promise not to deceive.
진실성은 말하는 것이 느끼는 것과 일치한다는 뜻이다. 그것은 타인을 향해 발휘되는 덕목이며 속이지 않겠다는 약속이다.

Authenticity is more demanding and more inward.
진정성은 더 까다롭고 더 내면적이다.

It asks whether the feelings themselves are truly one's own, rather than borrowed from convention or imposed by society.
그것은 그 감정들 자체가 관습에서 빌려 왔거나 사회가 강요한 것이 아니라 진정 자기 자신의 것인지를 묻는다.

A person can be perfectly sincere while being inauthentic, honestly reporting emotions that he has absorbed without reflection from those around him.
사람은 비진정적이면서도 완벽히 진실할 수 있는데, 주변 사람들로부터 성찰 없이 흡수한 감정을 정직하게 보고하는 경우다.

Trilling suggested that modern culture has shifted its admiration from the first ideal to the second.
트릴링은 현대 문화가 그 찬탄을 첫 번째 이상에서 두 번째 이상으로 옮겼다고 시사했다.

Where earlier ages praised the honest servant or the trustworthy friend, modern art often celebrates the rebel who refuses social roles in search of a truer self.
이전 시대들이 정직한 하인이나 믿을 만한 친구를 칭송했다면, 현대 예술은 흔히 더 진정한 자아를 찾아 사회적 역할을 거부하는 반항아를 찬양한다.

The shift has costs as well as benefits.
이 변화에는 이익뿐 아니라 대가도 있다.

Sincerity binds us to others, while a relentless pursuit of authenticity can treat every obligation as a threat to the self.
진실성은 우리를 타인과 묶어 주는 반면, 진정성에 대한 끈질긴 추구는 모든 의무를 자아에 대한 위협으로 취급할 수 있다.

해석 · Better Safe Than Sorry?

The precautionary principle holds that when an activity threatens serious harm, a lack of full scientific certainty should not be used as a reason to delay protective measures.
사전 예방 원칙은 어떤 활동이 심각한 해를 위협할 때, 완전한 과학적 확실성이 없다는 것이 보호 조치를 미루는 이유로 사용되어서는 안 된다고 주장한다.

It was designed for situations like ozone depletion, where waiting for conclusive proof would have meant waiting until the damage was irreversible.
그것은 오존층 파괴 같은 상황을 위해 고안되었는데, 그런 상황에서 결정적 증거를 기다린다는 것은 피해가 돌이킬 수 없게 될 때까지 기다린다는 뜻이었을 것이다.

Critics argue that, applied strictly, the principle is incoherent.
비판자들은 엄격하게 적용하면 그 원칙이 일관성이 없다고 주장한다.

Almost every action, including inaction, carries some risk of serious harm.
무행동을 포함해 거의 모든 행동은 심각한 해의 위험을 어느 정도 지닌다.

Banning a new pesticide may protect insects but reduce harvests; refusing a new drug may avoid side effects but leave patients without treatment.
새 살충제를 금지하면 곤충을 보호할 수 있지만 수확이 줄 수 있고, 새 약을 거부하면 부작용은 피할 수 있지만 환자들이 치료를 받지 못하게 될 수 있다.

If precaution forbids every risky option, it forbids all options, and so offers no guidance at all.
예방이 모든 위험한 선택지를 금지한다면 그것은 모든 선택지를 금지하는 것이고, 따라서 아무런 지침도 주지 못한다.

Defenders respond that the principle was never meant to be applied mechanically.
옹호자들은 그 원칙이 기계적으로 적용되도록 의도된 적이 결코 없었다고 응답한다.

Its purpose is to correct a particular bias in decision-making: the tendency to treat uncertain but potentially catastrophic and irreversible harms as if they were zero simply because they cannot yet be measured precisely.
그 목적은 의사 결정의 특정한 편향, 즉 불확실하지만 잠재적으로 파국적이고 돌이킬 수 없는 해를 아직 정밀하게 측정할 수 없다는 이유만으로 0인 것처럼 취급하는 경향을 바로잡는 것이다.

해석 · A Prediction That Made Itself True

In 1965 the engineer Gordon Moore observed that the number of transistors that could be placed on a chip was doubling roughly every year, a rate he later revised to every two years.
1965년 엔지니어 고든 무어는 칩에 넣을 수 있는 트랜지스터 수가 대략 매년 두 배가 되고 있다고 관찰했고, 나중에 그 속도를 2년마다로 수정했다.

The trend, known as Moore's law, held for about half a century.
무어의 법칙으로 알려진 이 추세는 약 반세기 동안 유지되었다.

Unlike a law of physics, however, it described no natural necessity.
그러나 물리 법칙과 달리 그것은 어떤 자연적 필연성도 기술하지 않았다.

Its persistence owed much to the fact that the industry adopted it as a target.
그것이 지속된 것은 업계가 그것을 목표로 채택했다는 사실에 크게 힘입었다.

Chip makers, equipment suppliers, and software developers planned their investments around the expected pace, and companies that fell behind it risked losing customers to those that kept up.
칩 제조사, 장비 공급업체, 소프트웨어 개발자들은 예상되는 속도에 맞춰 투자를 계획했고, 그 속도에 뒤처진 기업은 따라잡은 기업에게 고객을 잃을 위험이 있었다.

In this sense the prediction helped produce the very progress it forecast.
이런 의미에서 그 예측은 자신이 예측한 바로 그 진보를 만들어 내는 데 일조했다.

Coordination of this kind is valuable, because a complex industry needs shared expectations to move in step.
이런 종류의 조정은 가치가 있는데, 복잡한 산업은 보조를 맞추어 움직이기 위해 공유된 기대가 필요하기 때문이다.

But it also carries a danger: when physical limits finally made the old pace impossible, firms that had treated the trend as permanent found their plans suddenly obsolete.
그러나 그것에는 위험도 있다. 물리적 한계로 마침내 예전 속도가 불가능해지자, 그 추세를 영구적인 것으로 여긴 기업들은 자기 계획이 갑자기 쓸모없어졌음을 알게 되었다.

해석 · Were the Dark Ages Dark?

The phrase "Dark Ages" was coined by Renaissance scholars who saw themselves as reviving the brilliance of Greece and Rome after a long period of decline.
'암흑시대'라는 표현은 오랜 쇠퇴기 이후 그리스와 로마의 찬란함을 되살리고 있다고 스스로를 여긴 르네상스 학자들이 만들었다.

The label reflected their own agenda as much as the evidence.
그 명칭은 증거만큼이나 그들 자신의 의도를 반영했다.

It is true that after the collapse of Roman authority in the West, cities shrank, long-distance trade declined, and fewer written records survive.
서방에서 로마 권위가 무너진 뒤 도시가 줄고, 원거리 무역이 쇠퇴하고, 남아 있는 문서 기록이 더 적다는 것은 사실이다.

But "dark" increasingly describes what modern historians cannot see rather than what medieval people lacked.
그러나 '어둡다'는 말은 점점 더 중세 사람들이 결여한 것보다 현대 역사가들이 볼 수 없는 것을 묘사한다.

Monasteries preserved and copied classical texts, farmers adopted the heavy plow and new crop rotations, and scholars in the Islamic world advanced mathematics and medicine while maintaining contact with Europe.
수도원들은 고전 문헌을 보존하고 필사했고, 농민들은 무거운 쟁기와 새로운 윤작을 채택했으며, 이슬람 세계의 학자들은 유럽과 접촉을 유지하면서 수학과 의학을 발전시켰다.

Many historians now prefer the more neutral term "early Middle Ages."
이제 많은 역사가들은 더 중립적인 용어인 '중세 초기'를 선호한다.

The correction should not swing too far, however.
그러나 그 수정이 너무 멀리 가서는 안 된다.

Archaeological evidence shows real declines in living standards in parts of western Europe, including smaller cattle and fewer imported goods.
고고학적 증거는 더 작은 가축과 더 적은 수입품을 포함해 서유럽 일부 지역에서 생활 수준이 실제로 하락했음을 보여 준다.

The challenge is to describe loss and continuity together, without either romanticizing or dismissing the period.
과제는 그 시기를 낭만화하거나 무시하지 않고 상실과 연속성을 함께 묘사하는 것이다.

해석 · When Fairness Has Many Meanings

Algorithms increasingly help decide who receives a loan, who is interviewed for a job, and who is released before trial.
알고리즘은 누가 대출을 받는지, 누가 채용 면접을 보는지, 누가 재판 전에 석방되는지 결정하는 데 점점 더 많이 쓰인다.

Many people hope that such systems can be made fair, but researchers have discovered that "fair" has several mathematical meanings that cannot all be satisfied at once.
많은 사람이 그런 시스템을 공정하게 만들 수 있기를 바라지만, 연구자들은 '공정'에 동시에 모두 충족될 수 없는 여러 수학적 의미가 있다는 것을 발견했다.

One definition requires that a given risk score mean the same thing for every group: people labeled high-risk should reoffend at the same rate whatever their background.
한 정의는 주어진 위험 점수가 모든 집단에 같은 의미를 가져야 한다고 요구한다. 고위험으로 분류된 사람들은 배경과 관계없이 같은 비율로 재범해야 한다는 것이다.

Another requires that people who will not reoffend be wrongly labeled high-risk at the same rate in every group.
다른 정의는 재범하지 않을 사람들이 모든 집단에서 같은 비율로 잘못 고위험으로 분류되어야 한다고 요구한다.

When the underlying rates of reoffending differ between groups, it can be proven that no imperfect system can meet both definitions simultaneously.
기저 재범률이 집단 간에 다를 때, 불완전한 어떤 시스템도 두 정의를 동시에 충족할 수 없다는 것이 증명될 수 있다.

This result does not show that fairness is impossible.
이 결과는 공정성이 불가능하다는 것을 보여 주지 않는다.

It shows that choosing an algorithm involves choosing which kind of fairness matters most in a particular context, a decision that is ethical rather than technical.
그것은 알고리즘을 선택하는 것이 특정 맥락에서 어떤 종류의 공정성이 가장 중요한지 선택하는 것을 포함하며, 그 결정은 기술적이라기보다 윤리적이라는 것을 보여 준다.

Leaving it to engineers alone hides a value judgment inside what looks like a neutral calculation.
그것을 엔지니어에게만 맡기는 것은 중립적 계산처럼 보이는 것 안에 가치 판단을 숨기는 것이다.

해석 · How Bees Choose a Home

When a honeybee colony grows too large, thousands of bees leave with the old queen and cluster on a branch while they search for a new home.

꿀벌 군집이 너무 커지면 수천 마리의 벌이 늙은 여왕과 함께 떠나 나뭇가지에 뭉쳐 있으면서 새 집을 찾는다.

A few hundred scouts fly out to inspect possible sites, such as hollow trees.
수백 마리의 정찰벌이 속이 빈 나무 같은 가능한 장소들을 조사하러 날아간다.

A scout that finds a promising cavity returns and performs a dance whose vigor reflects the site's quality, recruiting others to go and look.
유망한 빈 공간을 찾은 정찰벌은 돌아와서 그 장소의 질을 반영하는 활기로 춤을 추어 다른 벌들이 가서 보도록 모집한다.

Crucially, each scout's enthusiasm fades with every repetition, so even a strong supporter eventually stops dancing.
결정적으로 각 정찰벌의 열정은 반복할 때마다 줄어들어서, 강한 지지자도 결국 춤을 멈춘다.

A site keeps attracting supporters only if newly recruited bees inspect it independently and also find it good.
한 장소는 새로 모집된 벌들이 그곳을 독립적으로 조사하고 역시 좋다고 판단할 때에만 계속 지지자를 끌어모은다.

When enough scouts are gathered at one site at the same time, the swarm takes off.
충분한 정찰벌이 한 장소에 동시에 모이면 무리가 이륙한다.

The system rarely picks a poor site, because no single bee's opinion can dominate for long.
이 체계는 좋지 않은 장소를 고르는 일이 드문데, 어떤 한 벌의 의견도 오래 지배할 수 없기 때문이다.

The biologist Thomas Seeley has suggested that human committees could learn from the bees: encourage independent investigation, limit the influence of any single advocate, and seek a broad consensus rather than a quick one.
생물학자 토머스 실리는 인간 위원회가 벌들에게서 배울 수 있다고 제안했다. 독립적 조사를 장려하고, 어느 한 옹호자의 영향력을 제한하며, 빠른 합의보다 폭넓은 합의를 추구하라는 것이다.

해석 · The Power of Expectations

Inflation is often explained as too much money chasing too few goods, but central bankers have come to believe that expectations play a powerful role as well.
인플레이션은 흔히 너무 적은 상품을 너무 많은 돈이 쫓는 것으로 설명되지만, 중앙은행가들은 기대 역시 강력한 역할을 한다고 믿게 되었다.

If workers expect prices to rise by ten percent next year, they will demand raises of at least that size, and firms that expect higher costs will raise their prices in advance.
노동자들이 내년에 물가가 10퍼센트 오를 것으로 예상하면 적어도 그만큼의 임금 인상을 요구할 것이고, 비용 상승을 예상하는 기업들은 미리 가격을 올릴 것이다.

The expectation of inflation thus helps to generate inflation.
그렇게 인플레이션에 대한 기대는 인플레이션을 만들어 내는 데 일조한다.

This is why many central banks announce explicit inflation targets, often around two percent.
그래서 많은 중앙은행이 흔히 2퍼센트 정도의 명시적 인플레이션 목표를 발표한다.

A credible target anchors expectations: if people believe the bank will act to keep inflation near its goal, they will set wages and prices accordingly, and the target becomes easier to reach.
신뢰할 만한 목표는 기대를 고정한다. 사람들이 은행이 인플레이션을 목표 근처로 유지하기 위해 행동할 것이라고 믿으면, 그에 맞게 임금과 가격을 정할 것이고 목표는 달성하기 더 쉬워진다.

Credibility, however, must be earned.
그러나 신뢰는 얻어 내야 하는 것이다.

A central bank that abandons its target whenever doing so is politically convenient will find that announcements no longer move expectations.
그렇게 하는 것이 정치적으로 편리할 때마다 목표를 버리는 중앙은행은 발표가 더 이상 기대를 움직이지 못한다는 것을 알게 될 것이다.

Restoring lost credibility can be painful, sometimes requiring interest rates high enough to cause a recession.
잃어버린 신뢰를 회복하는 것은 고통스러울 수 있으며, 때로는 경기 침체를 일으킬 만큼 높은 금리가 필요하다.

The value of a reputation, in other words, lies precisely in the costs one has shown oneself willing to bear to protect it.
다시 말해 평판의 가치는 바로 그것을 지키기 위해 기꺼이 감당하겠다고 보여 준 비용에 있다.

해석 · The Uses of Nostalgia

The word nostalgia was coined by a Swiss physician in the seventeenth century to describe a disease he observed in soldiers serving far from home.
노스탤지어라는 단어는 17세기 한 스위스 의사가 고향에서 멀리 떨어져 복무하는 병사들에게서 관찰한 병을 묘사하려고 만들었다.

For centuries afterward it was regarded as a disorder, associated with weakness and an inability to adapt.
이후 수 세기 동안 그것은 나약함과 적응 불능과 관련된 장애로 여겨졌다.

Recent psychological research has painted a more favorable picture.
최근의 심리학 연구는 더 호의적인 그림을 그려 왔다.

People who are prompted to recall a nostalgic memory tend afterward to report greater feelings of social connection, a stronger sense that life is meaningful, and more optimism about the future.
노스탤지어적 기억을 떠올리도록 유도된 사람들은 이후 더 큰 사회적 유대감, 삶이 의미 있다는 더 강한 느낌, 미래에 대한 더 많은 낙관을 보고하는 경향이 있다.

Nostalgia seems to arise especially when people feel lonely or uncertain, suggesting that it may function as a resource for coping rather than a symptom of failure to cope.
노스탤지어는 특히 사람들이 외롭거나 불확실하다고 느낄 때 생기는 것으로 보이는데, 이는 그것이 대처 실패의 증상이라기보다 대처를 위한 자원으로 기능할 수 있음을 시사한다.

The typical nostalgic memory, moreover, is not purely happy.
게다가 전형적인 노스탤지어적 기억은 순전히 행복하기만 한 것이 아니다.

It often begins with difficulty and ends in a moment of closeness with others, a narrative of redemption rather than escape.
그것은 흔히 어려움으로 시작해 타인과의 친밀함의 순간으로 끝나는, 도피가 아니라 구원의 이야기다.

Not all nostalgia is benign, however.
그러나 모든 노스탤지어가 무해한 것은 아니다.

Collective longing for an idealized national past can fuel hostility toward those blamed for its loss, showing that the same emotion can bind people together or divide them.
이상화된 국가의 과거에 대한 집단적 그리움은 그 상실의 책임을 뒤집어쓴 이들에 대한 적대감을 부추길 수 있는데, 이는 같은 감정이 사람들을 결속시킬 수도 분열시킬 수도 있음을 보여 준다.

해석 · When Science Changes Its Mind

In 1962 the historian Thomas Kuhn challenged the picture of science as a steady accumulation of facts.
1962년 역사가 토머스 쿤은 과학을 사실의 꾸준한 축적으로 보는 그림에 도전했다.

Most of the time, he argued, scientists work within a paradigm, a shared framework that defines which problems are worth solving and what counts as a solution.
그는 대부분의 시간 동안 과학자들이 패러다임, 즉 어떤 문제가 풀 가치가 있고 무엇이 해답으로 간주되는지를 정의하는 공유된 틀 안에서 일한다고 주장했다.

During such periods of "normal science," results that conflict with the paradigm are usually treated as errors or puzzles to be solved later, not as refutations.
이러한 '정상 과학' 시기에 패러다임과 충돌하는 결과는 대개 반증이 아니라 오류나 나중에 풀어야 할 수수께끼로 취급된다.

Only when anomalies accumulate and resist explanation does a crisis develop, sometimes ending in a revolution in which a new paradigm replaces the old.
변칙 사례가 쌓이고 설명에 저항할 때에만 위기가 생기며, 그것은 때때로 새 패러다임이 옛것을 대체하는 혁명으로 끝난다.

Kuhn's most controversial claim was that rival paradigms can be incommensurable: they may define key terms differently and disagree about which evidence matters, so that no neutral standard decides between them.
쿤의 가장 논쟁적인 주장은 경쟁하는 패러다임들이 공약 불가능할 수 있다는 것이었다. 그것들은 핵심 용어를 다르게 정의하고 어떤 증거가 중요한지에 대해 의견이 달라서, 어떤 중립적 기준도 그 사이에서 결정하지 못한다는 것이다.

Critics charged that this made science irrational, a matter of fashion or persuasion.
비판자들은 이것이 과학을 비합리적인 것, 유행이나 설득의 문제로 만든다고 비난했다.

Kuhn denied this, insisting that scientists still weigh accuracy, simplicity, and fruitfulness, even if these values cannot be combined by a mechanical rule.
쿤은 이를 부인하며, 과학자들이 여전히 정확성, 단순성, 생산성을 저울질한다고 주장했다. 비록 이 가치들이 기계적 규칙으로 결합될 수는 없더라도 말이다.

Theory choice, on his account, is reasoned but not algorithmic.
그의 설명에 따르면 이론 선택은 합리적이지만 알고리즘적이지 않다.